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EV Charging Station
Installation Manual *Ed.02*

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EV Charging Station

Installation Manual Ed.02

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1. Safety and Compliance

This document provides instructions to install the IEC DuraStation products included in section 4.2. Before installing the DuraStation charging station, review this manual carefully and consult with a licensed contractor, licensed electrician, and trained installation expert to insure compliance with local building codes, climate conditions, safety standards and wiring regulations.

The DuraStation must be connected to a grounded, permanent wiring system. Connections to the DuraStation shall comply with all local codes and ordinances.

Only a licensed contractor, and a licensed electrician in accordance with all local and national codes and standards should install the DuraStation.

Under no circumstances will compliance with the information in this manual relieve the user of his/her responsibility to comply with all applicable codes, safety standards or wiring regulations.

2. Receiving

Upon receipt of shipment, examine the package for damage that may have been sustained in transit.
If the shipping container must be opened outdoors, take proper precautions to prevent the entrance of moisture.
While unpacking, examine the product for broken, bent, or loose parts or other damage. If damage from shipment is evident, file a damage claim with the transportation company and notify the nearest sales office.

3. Definition and Terms

- **EV:** Electrical Vehicle
- **EVSE:** EV Supply Equipment
- **EV Charging station** = Charging station = EVSE
- **PE:** Protective Earth
- **Kiosk:** main body of EVSE
- **Host System/Host PC:** The PC that runs the GE DuraStation Manager Application to manage authorization and collect data from the Charging Stations.
- **Firewall:** A network security device that provides controlled access between two or more network segments, denying anything except approved communications between the various network segments.
- **DMZ:** Demilitarized Zone. An isolated network segment attached to a separate connection point on a firewall. This segment is then granted specific access to or from any other "Zone" to control who/what can connect INTO the DMZ or what the system or systems within the DMZ can connect OUT to.
- **Switch:** A network device that provides multiple connection points for attaching devices (CS, KIOSK, etc) to an individual segment of a communications network. For the purpose of this document, they are Ethernet network switches.
- **NIC:** Network Interface Card. A PC card with an RJ45 port that provides Ethernet connectivity.
- **Service laptop or PC:** A laptop or PC used to configure individual EVSE stations via direct Ethernet connection (use a cross-over cable)

4. Technical Data

The DuraStation has a list of basic features that are upgradeable, resulting in a robust and reliable solution for the need of EV charging infrastructure.

- The socket satisfies mode 3 charging standards, and is optionally equipped with an electromechanical interlock.
- LED light to display charger status:
  Green = Station active
  Blinking Green = Vehicle connected, but not charging
  Amber = Charging
  Red = Fault occurred
- Option for a Radio Frequency Identification (RFID) reader:
  users will gain charging authorization by swiping RFID cards in front of the readers.
- Ethernet network offered for RFID authorization service.
- RFID software application registers usage of the EVSE enabling data collection and will also monitor status of communication between RFID and DuraStation.
- Residual current protection and auto re-closure.
- Vehicle ground monitoring circuit.
- Single phase metering.

4.1. Technical characteristics

IEC Compliant	Mode 3 per IEC 61851
Vehicle Interface	Type 2 connector per IEC 62196
Voltage and Current Rating	230VAC at 16A or 400VAC at 32A
AC Max. Charging Power Output**	22kW (400VAC at 32A) 3.6kW (230VAC at 16A)
AC Power Input	230VAC requiring only L1, N, and PE 400VAC requiring only L1, L2, L3, N and PE
Recommended Panel Breaker	Compact pedestal, Pole, Wall: 1x4-pole 40A , or 2-pole 20A breaker on dedicated circuit Back-to-back pedestal: 2x4-pole 40A, or 2-pole 20A breaker on dedicated circuit
Ground Fault Protection	Internal 30mA RCD with auto re-closure
Cold Load Start	Random start up between 0 and 15 minutes for peak protection
Local Area Network	CAT5 Ethernet
Network Communication Protocol	TCP/IP
RFID Reader	ISO15693 and ISO14443 compliant
Standby Power	5W typical
Outdoor Rated	Enclosure IP54-IK10, socket outlet IP44
Safety Compliance	IEC 61851 and IEC 62196 compliant CE Marking Certification
CE	Low Voltage (2006/95/EG) and EMC Directive (2004/108EC).
Resistance against surges	IEC 61851 compliant
EMI Compliance	IEC 61851 compliant
Operating Temperature	-30°C to +50°C ambient
Operating Humidity	Up to 95% non-condensing
Approximate Shipping Weights	Compact pedestal: 30kg Back-to-back pedestal: 45kg Pole: 25kg Wall: 25kg
Dimensions HxWxD (in mm)	Compact pedestal: 1300 x 275 x 200 Back-to-back pedestal: 1300 x 350 x 300 Pole: 800 x 237 x 200 Wall: 800 x 237 x 200

** The maximum available power consumption is determined by the DuraStation. The actual power consumption is determined by the EV.

4.2. Catalogue data

4.2.1. TN-S distribution system

For use in electrical distribution systems of type TN-S, the following products are available:

Cat No.	Ref. No.	Type	Max Output	No. of Sockets	RFID	Integrated Meter
EVSPE16A1P1N	450100	Pedestal	230V 16A 1 phase	1	N	Single phase
EVSPE32A3P1N	450101	Pedestal	400V 32A 3 phase	1	N	Singe phase
EVSPE16A1P2N	450102	Pedestal	230V 16A 1 phase	2	N	Single phase
EVSPE32A3P2N	450103	Pedestal	400V 32A 3 phase	2	N	Single phase
EVSPE16A1P1R	450104	Pedestal	230V 16A 1 phase	1	Y	Single phase
EVSPE32A3P1R	450105	Pedestal	400V 32A 3 phase	1	Y	Single phase
EVSPE16A1P2R	450106	Pedestal	230V 16A 1 phase	2	Y	Single phase
EVSPE32A3P2R	450107	Pedestal	400V 32A 3 phase	2	Y	Single phase
EVSWA16A1P1N	450108	Wall	230V 16A 1 phase	1	N	Single phase
EVSWA32A3P1N	450109	Wall	400V 32A 3 phase	1	N	Single phase
EVSWA16A1P1R	450110	Wall	230V 16A 1 phase	1	Y	Single phase
EVSWA32A3P1R	450111	Wall	400V 32A 3 phase	1	Y	Single phase
EVSPO16A1P1N	450112	Pole	230V 16A 1 phase	1	N	Single phase
EVSPO32A3P1N	450113	Pole	400V 32A 3 phase	1	N	Single phase
EVSPO16A1P1R	450114	Pole	230V 16A 1 phase	1	Y	Single phase
EVSPO32A3P1R	450115	Pole	400V 32A 3 phase	1	Y	Single phase

4.2.2. TN-S with surge arrestor

In certain electrical systems the DuraStation power circuit has to include an impulse surge arrestor device to comply with the local regulations or the conditions of the application. See products below for this requirement:

Cat No.	Ref. No.	Type	Max Output	No. of Sockets	RFID	Integrated Meter
EVSPE16A1P1N-SA	450131	Pedestal	230V 16A 1 phase	1	N	Single phase
EVSPE32A3P1N-SA	450133	Pedestal	400V 32A 3 phase	1	N	Singe phase
EVSPE16A1P2N-SA	450139	Pedestal	230V 16A 1 phase	2	N	Single phase
EVSPE32A3P2N-SA	450141	Pedestal	400V 32A 3 phase	2	N	Single phase
EVSPE16A1P1R-SA	450132	Pedestal	230V 16A 1 phase	1	Y	Single phase
EVSPE32A3P1R-SA	450134	Pedestal	400V 32A 3 phase	1	Y	Single phase
EVSPE16A1P2R-SA	450140	Pedestal	230V 16A 1 phase	2	Y	Single phase
EVSPE32A3P2R-SA	450142	Pedestal	400V 32A 3 phase	2	Y	Single phase
EVSWA16A1P1N-SA	450135	Wall	230V 16A 1 phase	1	N	Single phase
EVSWA32A3P1N-SA	450137	Wall	400V 32A 3 phase	1	N	Single phase
EVSWA16A1P1R-SA	450136	Wall	230V 16A 1 phase	1	Y	Single phase
EVSWA32A3P1R-SA	450138	Wall	400V 32A 3 phase	1	Y	Single phase

4.2.3. TN-C distribution system

In TN-C electrical distribution systems, the following DuraStation products are considered:

Cat No.	Ref. No.	Type	Max Output	No. of Sockets	RFID	Integrated Meter
EVSPE16A1P1N-NC	450143	Pedestal	230V 16A 1 phase	1	N	Single phase
EVSPE32A3P1N-NC	450145	Pedestal	400V 32A 3 phase	1	N	Singe phase
EVSPE16A1P2N-NC	450151	Pedestal	230V 16A 1 phase	2	N	Single phase
EVSPE32A3P2N-NC	450153	Pedestal	400V 32A 3 phase	2	N	Single phase
EVSPE16A1P1R-NC	450144	Pedestal	230V 16A 1 phase	1	Y	Single phase
EVSPE32A3P1R-NC	450146	Pedestal	400V 32A 3 phase	1	Y	Single phase
EVSPE16A1P2R-NC	450152	Pedestal	230V 16A 1 phase	2	Y	Single phase
EVSPE32A3P2R-NC	450154	Pedestal	400V 32A 3 phase	2	Y	Single phase
EVSWA16A1P1N-NC	450147	Wall	230V 16A 1 phase	1	N	Single phase
EVSWA32A3P1N-NC	450149	Wall	400V 32A 3 phase	1	N	Single phase
EVSWA16A1P1R-NC	450148	Wall	230V 16A 1 phase	1	Y	Single phase
EVSWA32A3P1R-NC	450150	Wall	400V 32A 3 phase	1	Y	Single phase

CAUTION: In TN-C Networks, ensure that all earth connections are the same point, and also, as it is indicated in the section "Wiring Information", neutral and earth functions are combined.

5. Hardware Installation

5.1. Before installing

Before any installation work is performed, study the entire manual and drawings furnished by the supplier for a particular installation.

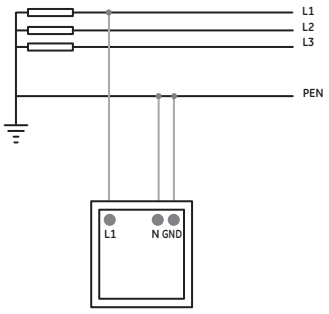
5.2. Safety requirements

- Eye protection with appropriate glasses (especially when using an electrical drill).
- During the installation be sure not to connect the power distribution network cables without additional protection.
- Ensure that no power is connected at all times when working.
- Use appropriate tools for each function.
- Turn off equipment used during the installation (better unplugged), for a change or cleaning process.
- Comply with the general security requirements common to all electrical appliances.

5.3. Wiring information

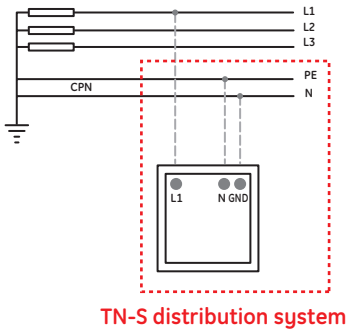
This equipment is designed for use in networks according to earthing types TN-C and TN-S, as it is shown in the following wiring diagrams for each category:

Single-phase 230VAC at 16A



TN-C distribution system

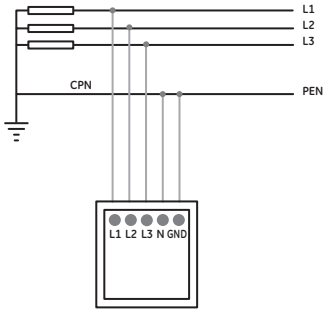
Cat No. TN-C
EVSPE16A1P1-X-**NC**
EVSPE16A1P2-X-**NC**
EVSWA16A1P1-X-**NC**
EVSPO16A1P1-X-**NC**



TN-S distribution system

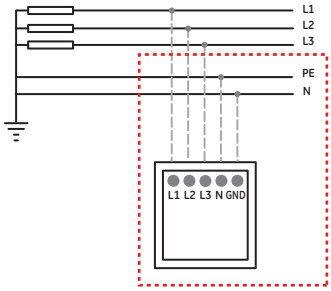
Cat No. TN-S
EVSPE16A1P1-X
EVSPE16A1P2-X
EVSWA16A1P1-X
EVSPO16A1P1-X

Three-phase 400VAC at 32A



TN-C distribution system

Cat No. TN-C
EVSPE32A3P1-X-**NC**
EVSPE32A3P2-X-**NC**
EVSWA32A3P1-X-**NC**
EVSPO32A3P1-X-**NC**



TN-S distribution system

Cat No. TN-S
EVSPE32A3P1-X
EVSPE32A3P2-X
EVSWA32A3P1-X
EVSPO32A3P1-X

IMPORTANT: In countries with different supply system as the previous,

- *If a 110 voltage L-N is supplied,*
  - *The single-phase DuraStation model (230VAC at 16A) can be connected to phase-phase;*
  - *In the three-phase DuraStation model (400VAC at 32A), a possible solution would be to connect the DuraStation to the output of an auto-transformer to go from 230 to 400 V. Connect the 3 phases and the transformer to generate its own artificial neutral.*
- *In cases where the supply system does not correspond to any of the above, the wiring connection should be evaluated by a qualified electrician.*

CAUTION: The single-phase DuraStation model is designed to work only with a single-phase 230VAC (phase-neutral or phase-phase) power supply system. The three-phase model is designed to be connected only to a three-phase 400VAC supply. Other connectivity to the power source may result in incorrect operation or a safety hazard.

NOTE: For serial connection of more than one DuraStation on a single power source, refer to the corresponding installation instruction section below.

5.4. Installation overview and specifications

This document describes how to install units of the DuraStation product line.
It includes step-by-step instructions for installing the body assembly for the following stations:

- Compact Pedestal
- Back-to-back Pedestal
- Wall Mounted
- Pole Mounted

Table 1: Torque specifications

Type	Size	Characteristics	Rated Torque N/m	HBN Article
Pedestal	M12	DIN934, 304 Quality, Class 80	21	1202-23
	M12x1000	DIN975 A2	21	1120-42
Wall mounted	M10x35	DIN933, 304 Quality, Class 80	14	1120-26
Pole mounted	M10x35	DIN933, 304 Quality, Class 80	14	1120-26

Table 2: Cable gland

Type	Cable Range (Inches)	Cable Range (mm)	Thread Length (mm)	Knockout Diameter (mm)
M32x1.5	0.669 - 0.984	18-25	12	32

Table3: Tools

Type	Characteristics
Screwdriver	0.6 x 3.5 (Used in ground connections)
Screwdriver	PZ2 (Used in wiring connections)
Hexagonal key	Socket size (mm): 19
Electric drill	Used in the wall mounted and pole mounted fixation.
Wire stripper, hammer, wall anchors.	

Table 4: Contact blocks

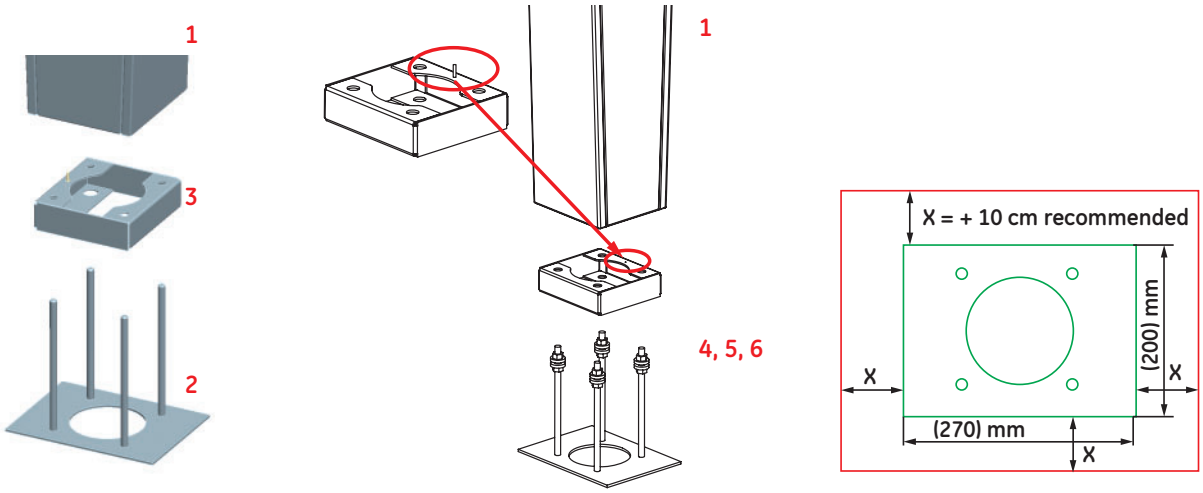
Type Range	Size	1 Single wire (solid) (min-max) mm^2	1 Single wire (semi-solid) (min-max) mm^2	2 Single wires (semi-solid) (min-max) mm^2	1 Stranded (flexible) (min-max) mm^2	2 Stranded (flexible) (min-max) mm^2	Rated conductor cross-section
RK 35 (Phases)	M6	2.5-16	2.5-50	16-16	2.5-35	2.5-16	35
SL 35 (Earthing)	M6	2.5-16	2.5-50	16-16	2.5-35	2.5-16	35

WARNING: De-energize equipment before performing any work on the installation.
Make sure that the main breaker of the DuraStation is locked out, as well as the upstream breaker in the distribution panel. (This is achieved with accessory KS 644929 in both cases)

5.5. Compact pedestal

Bill of material/Item	Description	Characteristics	Quantity
1	Kiosk unit	Compact pedestal	1
2	Base mounting assembly	-	1
3	Kiosk skirting	-	1
4	Hexagonal nuts M12	DIN934, 304 Quality, Class 80	8
5	Washer plain	DIN125A, 304 Quality	8
6	Lock washer	DIN127, 304 Quality	4

Procedure in 13 steps



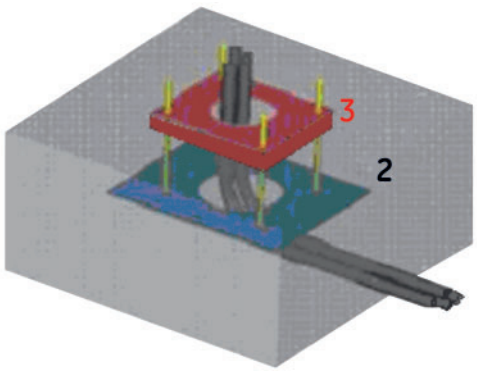
1. Identify a horizontal area for the pedestal location and create the corresponding cavity for the foundation. The dimensions of the base mounting assembly and recommended minimum dimensions of the foundations are given in above figure.

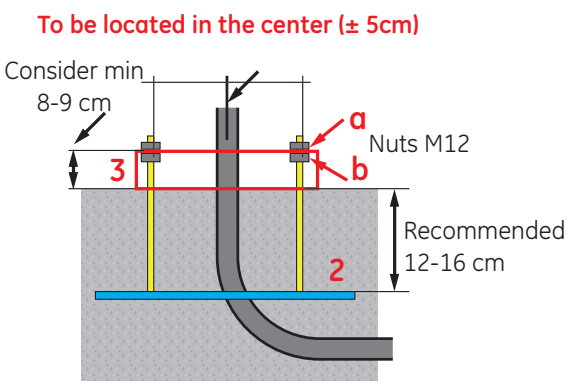
2. The power cable from the network includes the 2/4 cables for power (1/3 phases + N) and 1 for ground. The communication cable (Ethernet) is required if the DuraStation is intended to be used with the RFID authentication system. Refer to the section "Wiring Terminals Visuals" for connection locations.

IMPORTANT: verify that the mains voltage available in the installation corresponds to the voltage required by the DuraStation and that the line has an appropriate cross section, ground conductor, complying with current standards and wiring regulations

The cables must extend 80 cm to 1 m above the concrete, or according to local codes and wiring regulations.

3. Place the base mounting assembly plate (2) into the foundation cavity, over the previously installed conduits.



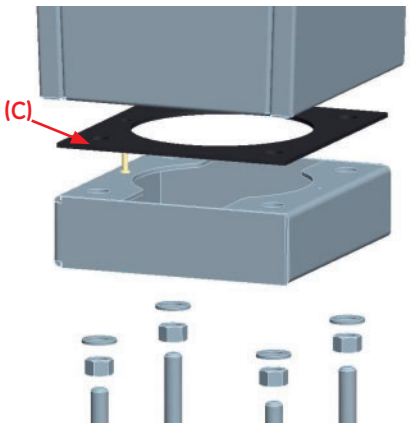


4. Pour concrete to the level shown in the above figure. Verify that the final surface is completely smooth and horizontal. (Consider a minimum of 8-9 cm to ensure the proper threading as shown in the figure above).

5. Screw the four nuts and washers (b) on the rods, as indicated in the figure above.

6. Insert the kiosk skirting (3) over the threaded rods, ensuring there is no contact with the previous nuts. (Maintain the alignment of the kiosk skirting as shown in the figure on the previous page).

7. Place carefully the gasket (c), taking as reference the ground pin and fixation screws.



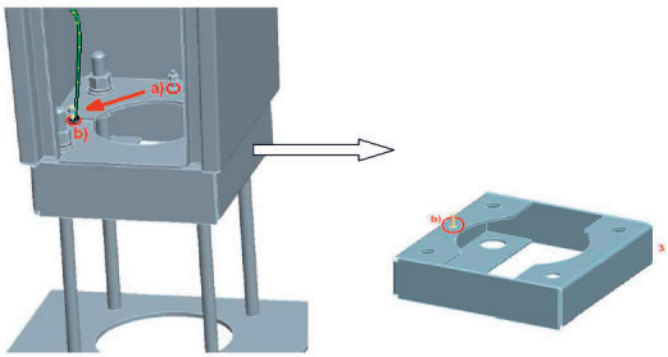
8. Open the door of the kiosk unit with the corresponding key by the door latch. Insert the kiosk unit over the threaded rods above the kiosk skirting, ensuring that it is correctly aligned and no movement can take place.

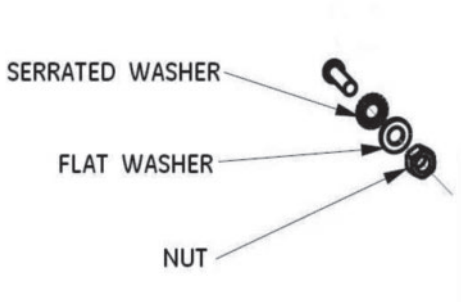
9. Screw the internal nuts and washers (a) and apply a light torque.

10. Adjust bottom nuts and washers (b) ensuring the correct alignment.

11. Finally, tighten the internal nuts (a) again to secure the final position of the DuraStation. (Refer to the torque specifications in table 1).

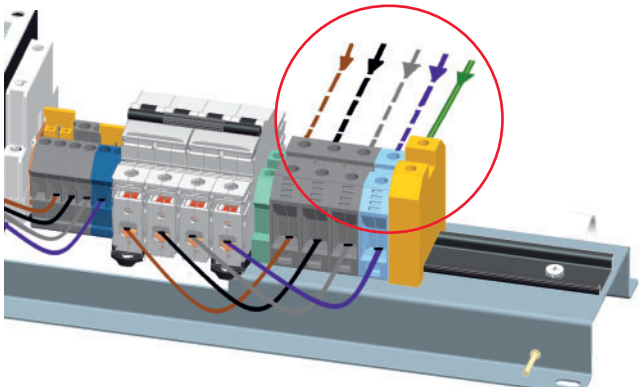
12. *IMPORTANT: For proper earthing of the installed unit, remove the earth cable from pin (a) in the bottom of the unit and connect it to pin (b). For this earth connection (b) use the fixation kit (M5) shown below.*



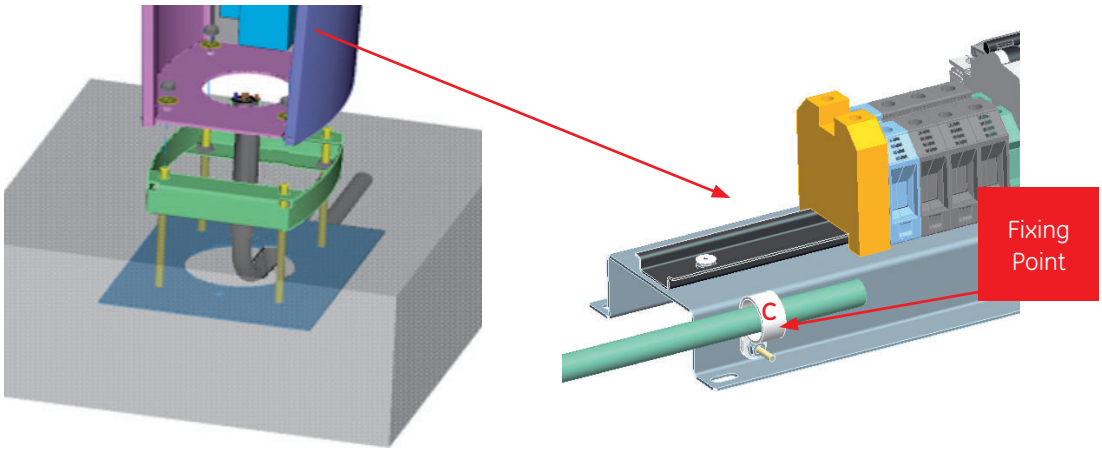


13. Connect the power supply wires to the power circuit:
Pull neutral and phases into the body assembly and connect them to the integrated terminal blocks as illustrated in the following picture.

The earth cable of the system is connected to a contact block prepared specifically for earthing connections.

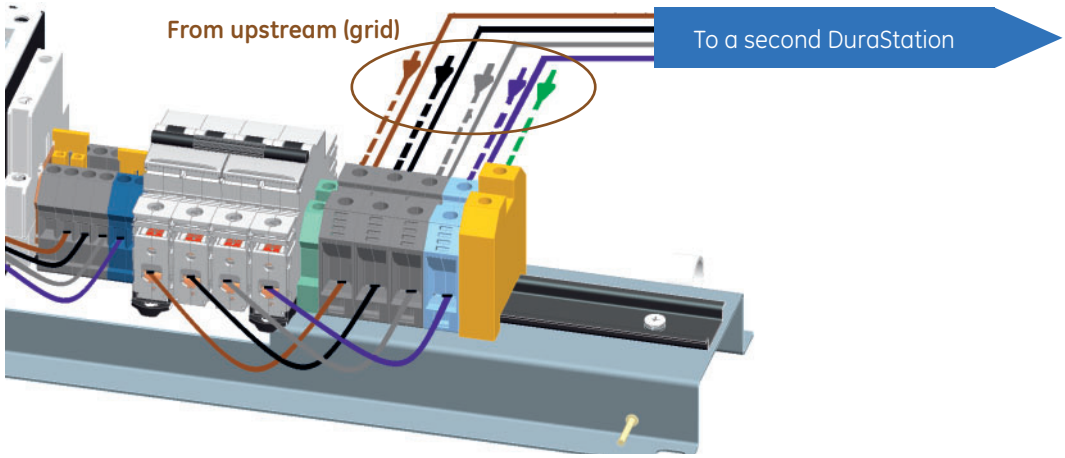


To reduce the effects of external traction force, fix the power supply cables tightly by means of the provided cable clamps (c).

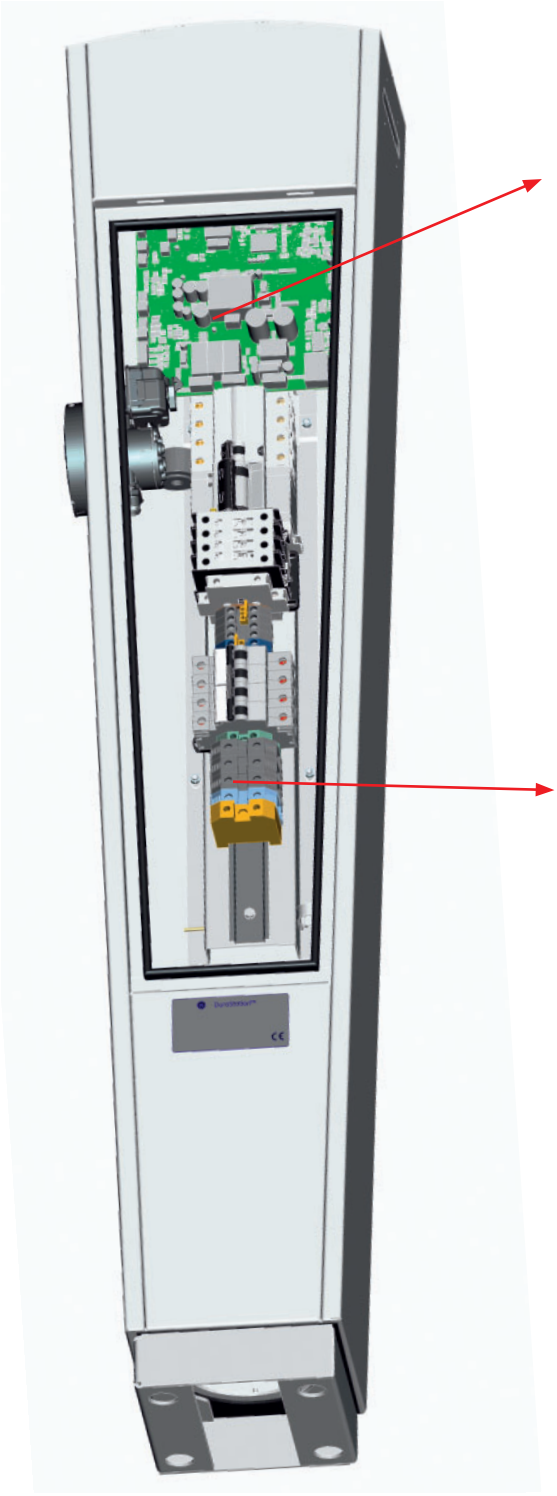


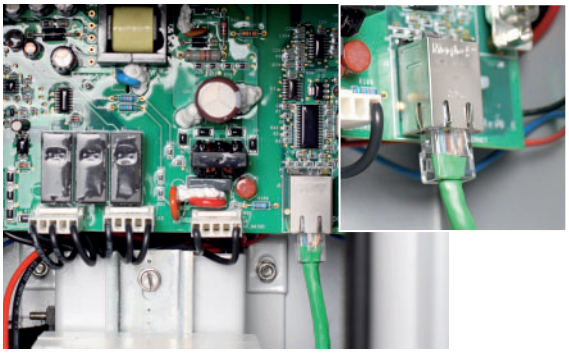
Note: To connect the DuraStation in series with a second DuraStation (on a single power source), connect the outgoing wires to the terminal blocks as shown below.

Refer to table 4 for details about admissible wire cross sections.

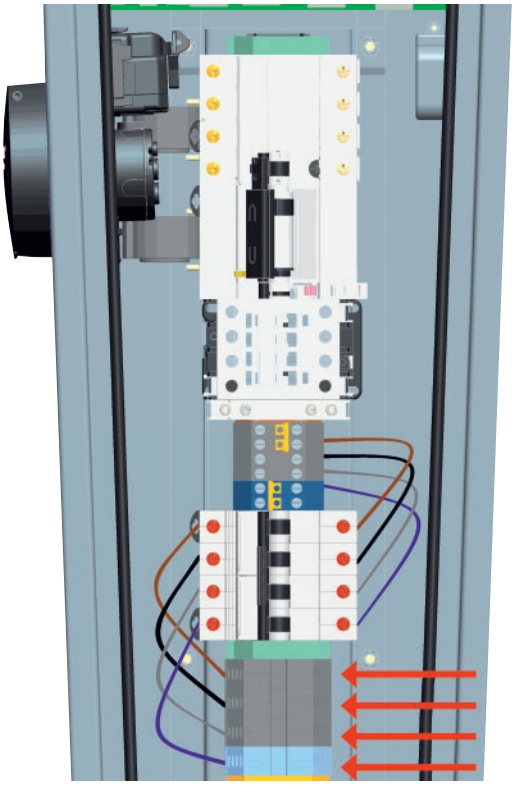


Wiring Terminals Visuals

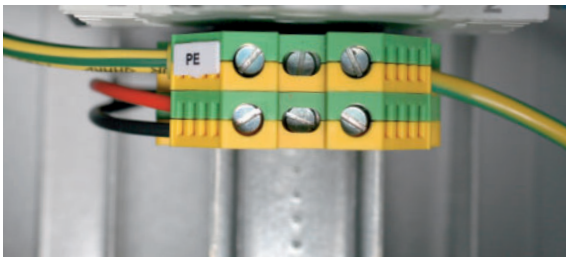




Ethernet connector



Wires connection

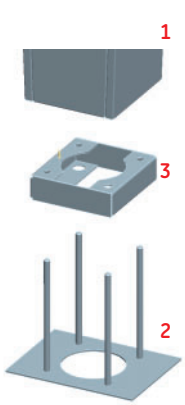


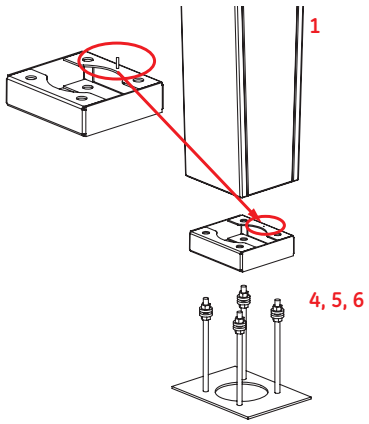
Protective earth

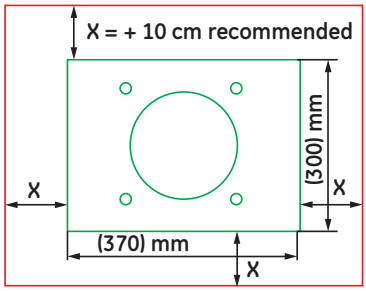
5.6. Back-to-back pedestal

Bill of material/Item	Description	Characteristics	Quantity
1	Kiosk unit	Back-to-back	1
2	Base mounting assembly	-	1
3	Kiosk skirting	-	1
4	Hexagonal nuts M12	DIN934, 304 Quality, Class 80	8
5	Washer plain	DIN125A, 304 Quality	8
6	Lock washer	DIN127, 304 Quality	4

Procedure in 12 steps







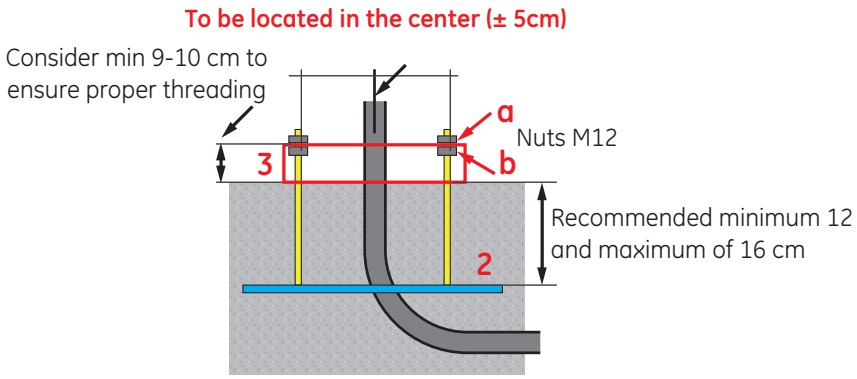
1. Identify a horizontal area for the pedestal location and create the corresponding cavity for the foundation. The dimensions of the base mounting assembly and recommended minimum dimensions of the foundations are given in above figure.

2. The power cable from the network includes the 2/4 cables for power (1/3 phases + N) and 1 for ground. The communication cable (Ethernet) is required if the DuraStation is intended to be used with the RFID authentication system. Refer to the section "Wiring Terminals Visuals" for connection locations.

IMPORTANT: verify that the mains voltage available in the installation corresponds to the voltage required by the DuraStation and that the line has an appropriate cross section, with ground conductor, complying with current standards and wiring regulations.

The cables must extend 80 cm to 1 m above the concrete, or according to local codes and wiring regulations.

3. Place the base mounting assembly plate (2) into the foundation cavity, over the previously installed conduits.



4. Pour concrete to the level shown in the above figure. Verify that the final surface is completely smooth and horizontal. (Consider a minimum of 9-10 cm to ensure the proper threading as shown in the figure above).

5. Screw the four nuts and washers (b) on the rods, as indicated in the figure above.

6. Insert the kiosk skirting (3) over the threaded rods, ensuring there is no contact with the previous nuts. (Maintain the alignment of the kiosk skirting as shown in the figure on the previous page).

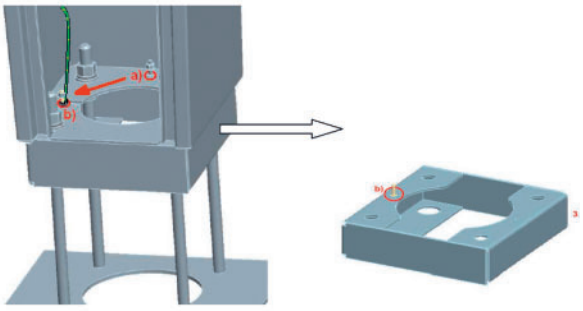
7. Open the door of the kiosk unit with the corresponding key by the door latch. Insert the kiosk unit over the threaded rods above the kiosk skirting, ensuring that it is aligned correctly and no movement can take place.

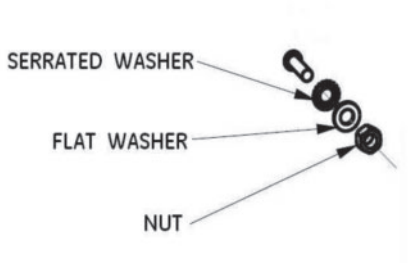
8. Screw the internal nuts and washers (a) and applied a light torque.

9. Adjust bottom nuts and washers (b) ensuring the correct alignment.

10. Finally, tighten the internal nuts (a) again to secure the final position of the DuraStation. (Refer to the torque specifications in table 1).

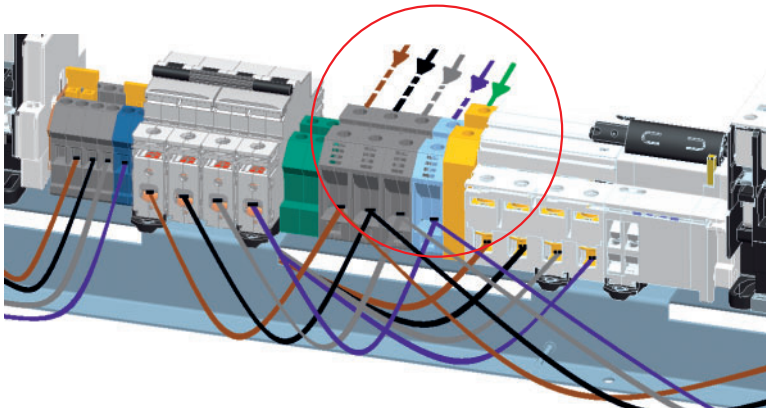
11. *IMPORTANT: For proper earthing of the installed unit, remove the earth cable from pin (a) in the bottom of the unit and connect it to pin (b).*
For this earth connection (b) use the fixation kit (M5) shown below.



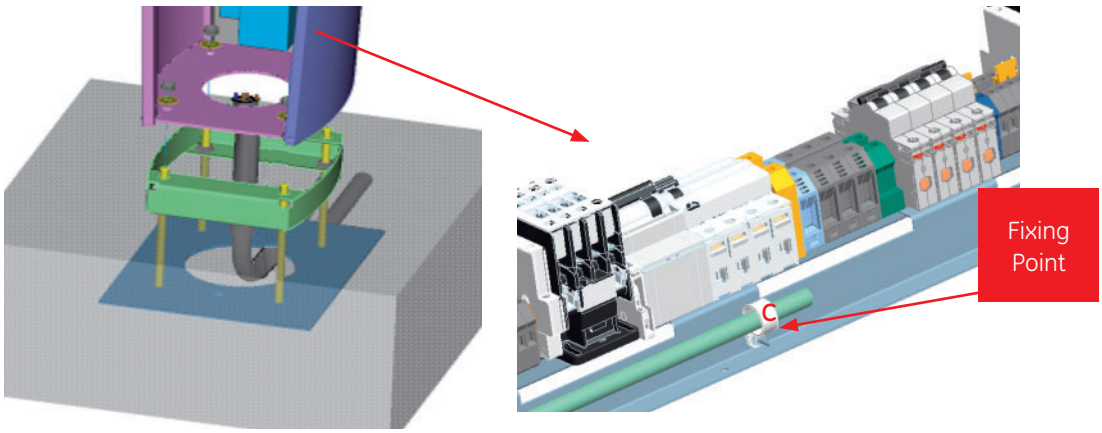


12. Connect the different power supply wires to the power circuit:
Pull neutral and phases into the body assembly and connect them to the integrated terminal blocks as illustrated in the following picture.

The earth cable of the system is common for both of the circuits and it is connected to a contact block prepared specifically for earthing connection. (Refer to the following "Wiring Terminals Visuals" section).

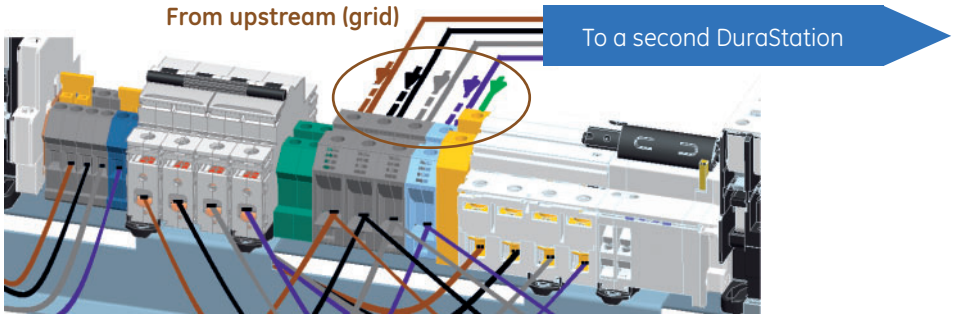


To reduce the effects of external traction force, fix the power supply cables tightly by means of the provided cable clamps (c).

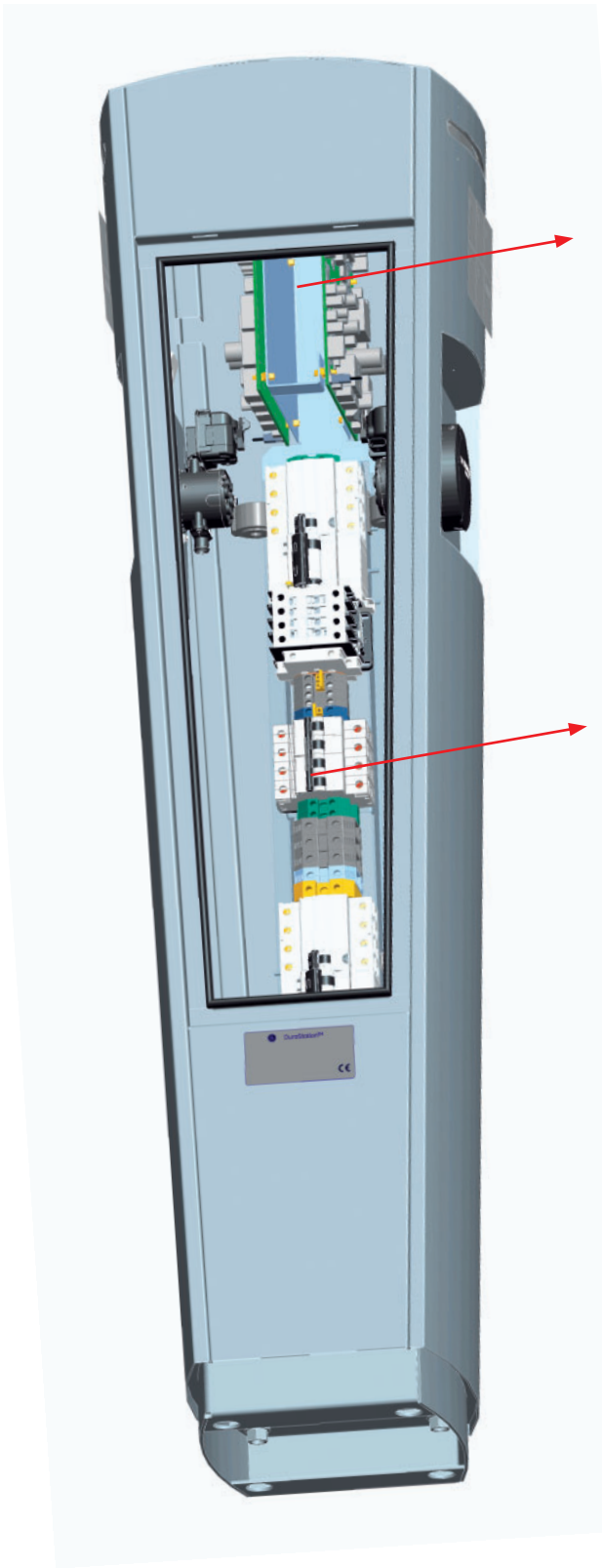


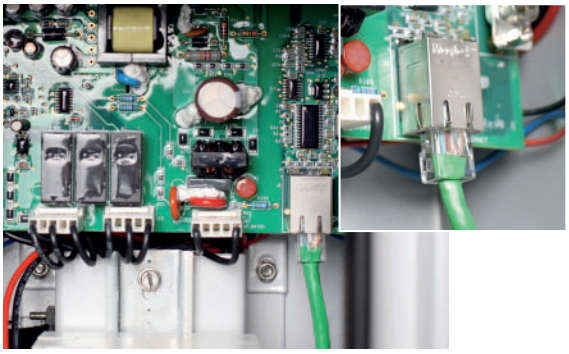
Note: To connect the DuraStation in series with a second DuraStation (on a single power source), connect the outgoing wires to the terminal blocks, as shown below.
Connecting a second DuraStation can only be done if both of them are rated for 16A usage.

Refer to table 4 for details about admissible wire cross sections.

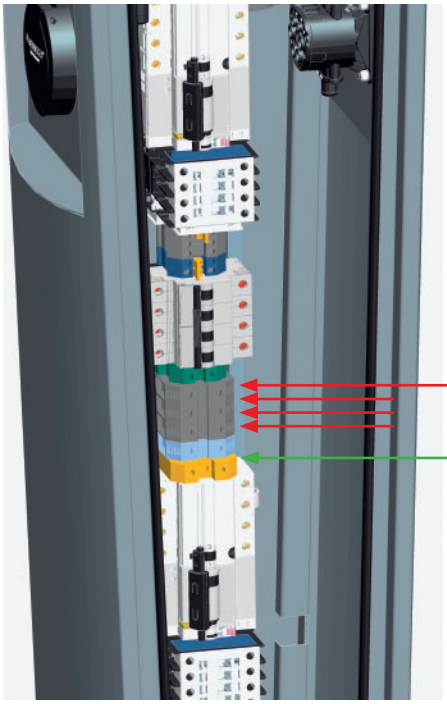


Wiring Terminals Visuals

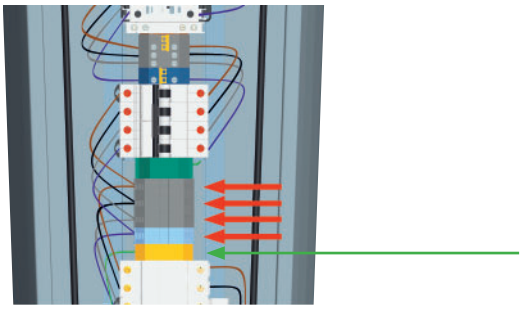




Ethernet connector



Wires connection

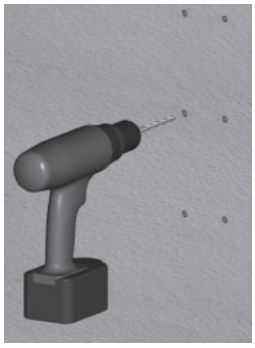


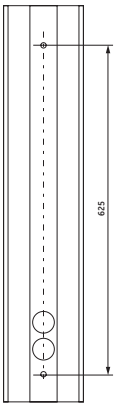
5.7. Wall mounted

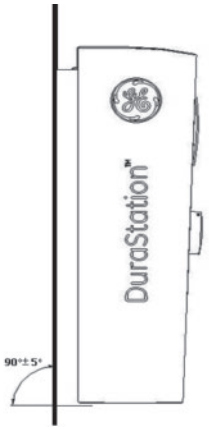
Bill of material/Item	Description	Characteristics	Quantity
1	Kiosk unit	Wall mounted	1
2	Wall base bracket	-	1
3	WM fixation gasket	-	4
4	Flat washer M10	DIN9021, ISO 7093	4
5	Hexagonal screw M10x35	DIN933, 304 Quality, Class 80	4
6	Cable gland	M32	2
7	Ring	M32	2
8	Plastic lock nut	M32	2
9	Screw plug	DIN 46 320	1

Procedure in 5 steps

1. Drill 6 holes in the wall, as illustrated. Use the supplied template to ensure correct alignment.





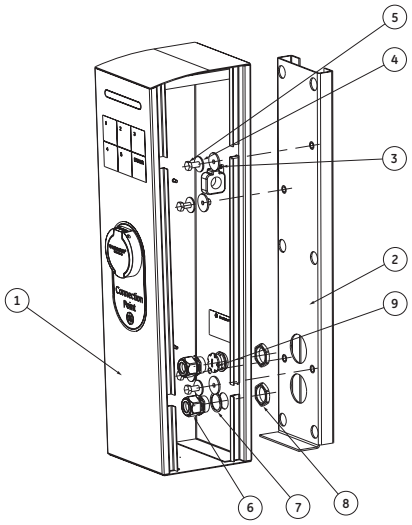


IMPORTANT: Exercise extreme caution when drilling holes in the wall. There could be electrical cables built-in the wall.

IMPORTANT: The maximum height above the surface should be set to meet any local or national requirements for persons with disabilities. It is recommended that the lowest part of the socket-outlet, shall be located at a height between 0.4 m and 1.5 m above ground level.

2. Fasten the wall base bracket to the wall, using adequate screws and anchors depending on the characteristics of the wall.

3. Install the kiosk wallmounted unit on the wall base bracket, using the fixation gaskets and washers as indicated in the following picture. (Refer to the torque specifications in table 1).



4. The power cable from the network includes the 2/4 cables for power (1/3 phases + N) and 1 for ground. The communication cable (Ethernet) is required if the DuraStation is intended to be used with the RFID authentication system.

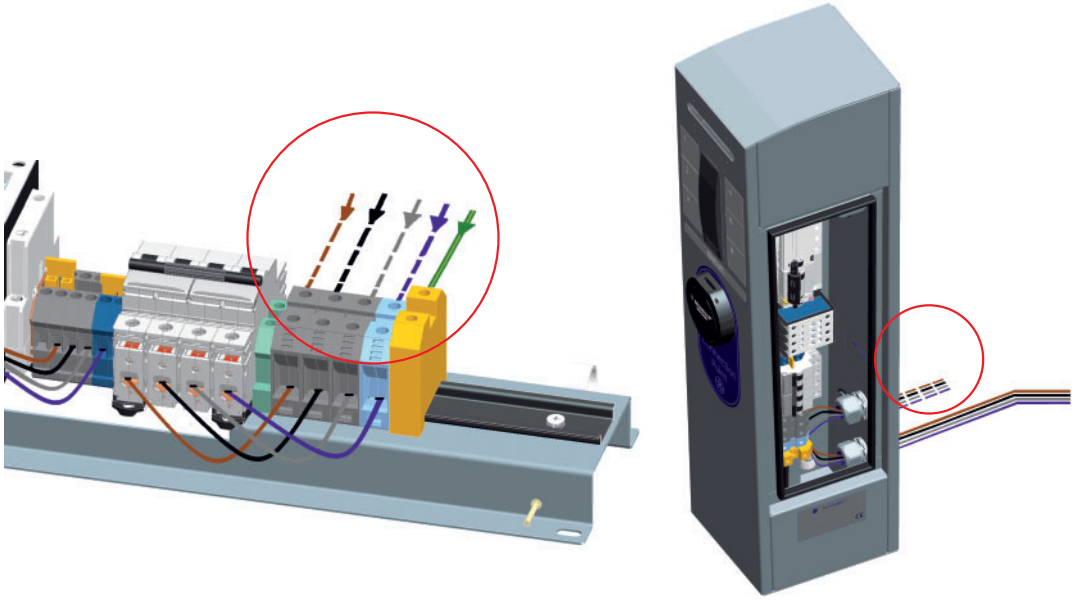
IMPORTANT: Verify that the mains voltage available in the installation corresponds to the voltage required by the DuraStation and that the line has an appropriate cross section, with ground conductor, complying with current standards and wiring regulations.

The cables must extend 40 to 60 cm above the wall surface, or according to local codes and wiring regulations.

To reduce the effects of external traction force, fix the power supply cables tightly by means of the provided cable glands. Ensure to center the cables and turn the gland, until there is no cable movement (Refer to table 2).

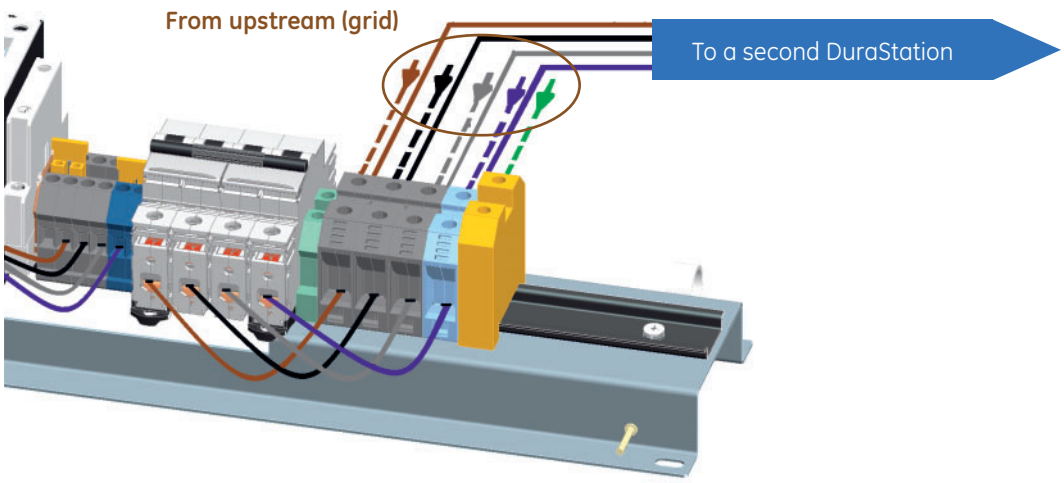
5. Connect the power supply wires to the power circuit:
Pull neutral and phases into the body assembly and connect them to the integrated terminal blocks as illustrated in the following picture.

The earth cable of the system is connected to a contact block prepared specifically for that earthing connection.

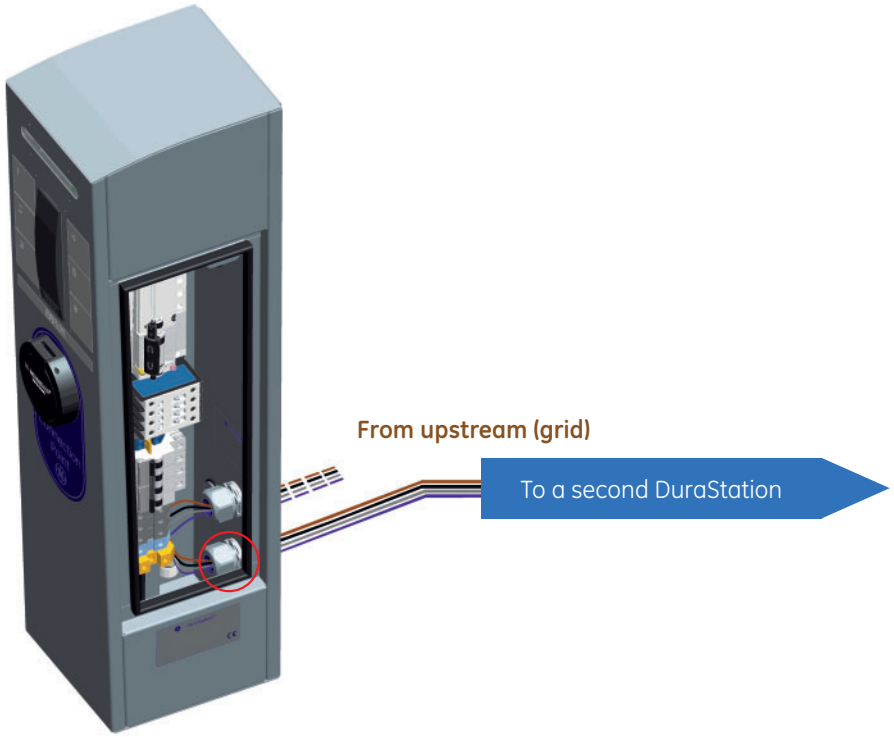


Note: To connect the DuraStation in series with a second DuraStation (on a single power source), connect the outgoing wires to the terminal blocks, as shown below.

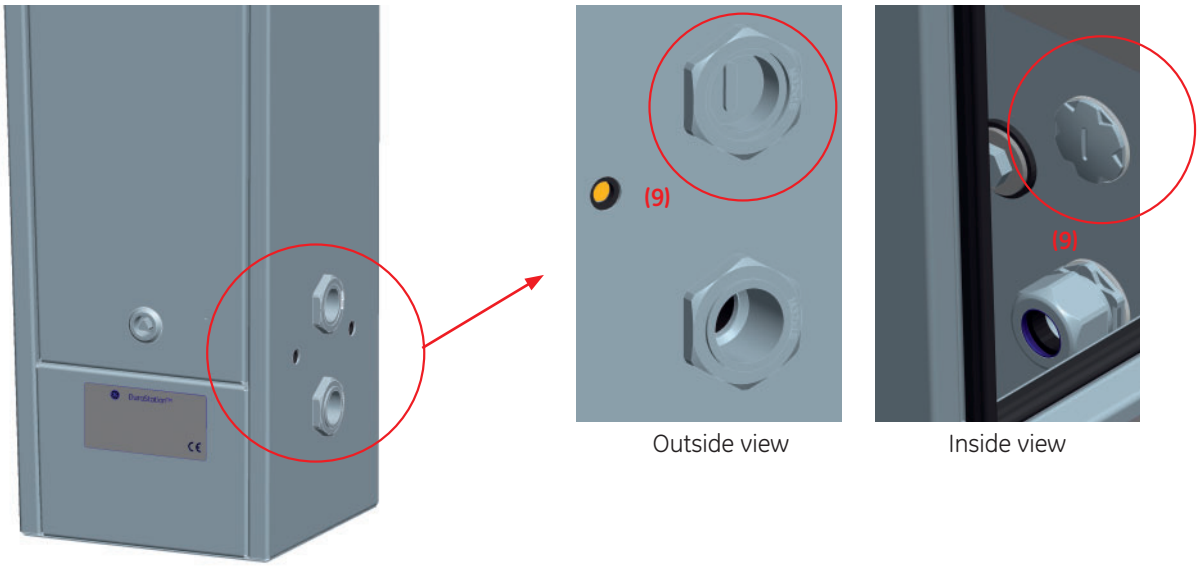
Refer to table 4 for details about admissible wire cross sections.



For this model, an extra outlet is provided in the back side of the DuraStation. It is used in case of a connection in series with a second DuraStation, as it is shown.



If the DuraStation is not connected to a second DuraStation, a Screw Plug (9) is used to close the additional outlet, maintaining the appropriate IP protection rating of the system (IP54).



Outside view

Inside view

* Refer to "Charging Station Maintenance Procedures" manual for more details about replacement procedures in the cable gland or screw plug.

5.8. Pole mounted

Bill of material/Item	Description	Characteristics	Quantity
1	Kiosk unit	Pole mounted	1
2	Base mounting assembly	-	1
3	WM fixation gasket	-	4
4	Flat washer M10	DIN9021, ISO 7093	4
5	Hexagonal screw M10x35	DIN933, 304 Quality, Class 80	4
6	Pole mounted clamp	-	2
7	Cable gland	M32	2
8	Ring	M32	2
9	Plastic lock nut	M32	2
10	Screw plug	DIN 46 320	1

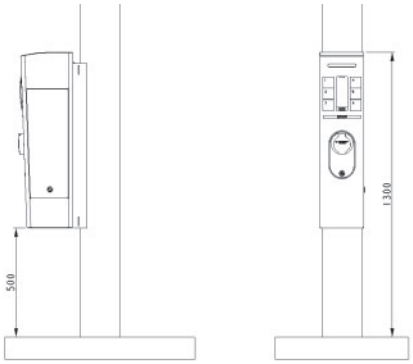
Procedure in 6 steps

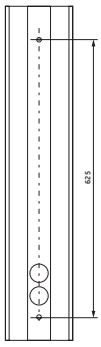
1. Drill the different holes in the pole to accommodate the two couplings and the two screws (already welded into the base) for the base-mounting fixation.

IMPORTANT: Exercise extreme caution when drilling holes in the pole. There could be electrical cables built-in the pole.

2. Insert the coupler into the hole and hold the body assembly in place using a temporary strap.

IMPORTANT: The maximum height above the surface should be set to meet any local or national requirements for persons with disabilities. It is recommended that the lowest part of the socket-outlet, shall be located at a height between 0.4 m and 1.5 m above ground level.

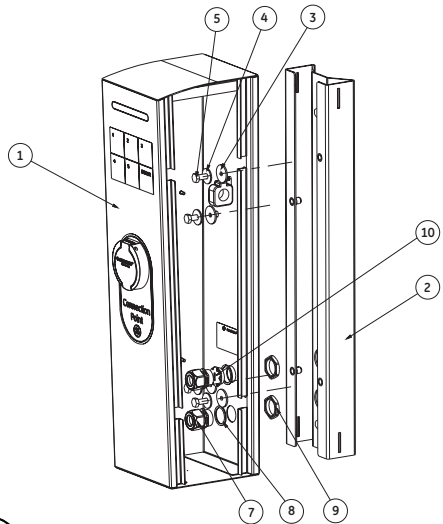




3. Strap the body assembly to the pole using 12 mm (0.472”), 1,2mm (0.030”) stainless steel strapping.
(Possible diameters for the pole structure: 150-180 mm)

IMPORTANT: A high tension-strapping tool has to be used to install the straps.

4. Install the kiosk pole-mounted unit, using the fixation gaskets and washers as indicated in the following picture. (Refer to the torque specifications in table 1).



5. The power cable from the network includes the 2/4 cables for power (1/3 phases + N) and 1 for ground. The communication cable (Ethernet) is required if the DuraStation is intended to be used with the RFID authentication system.

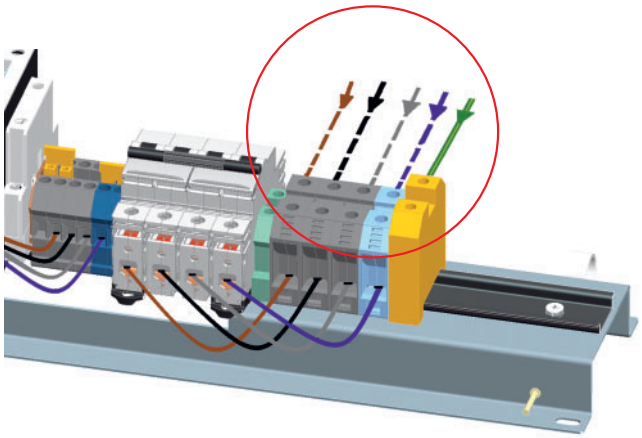
IMPORTANT: verify that the mains voltage available in the installation corresponds to the voltage required by the DuraStation and that the line has an appropriate section, with ground conductor, complying with current standards and wiring regulations.

The cables must extend 40 to 60 cm above the pole surface, or according to local codes.

To reduce the effects of external traction force, fix the power supply cables tightly by means of the provided cable glands. Ensure to center the cables and turn the gland, until there is no cable movement (Refer to table 2).

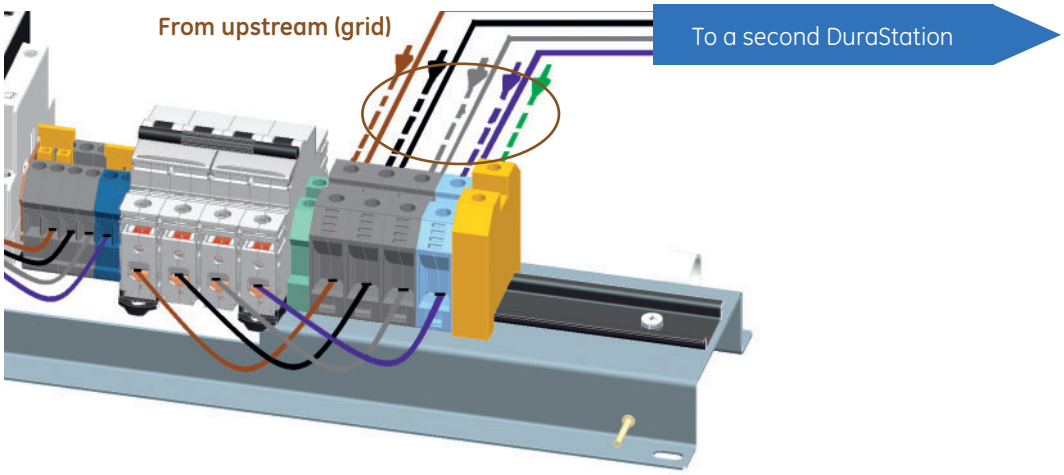
6. Connect the power supply wires to the power circuit: Pull neutral and phases into the body assembly and connect them to the integrated terminal blocks as illustrated in the following picture.

The earth cable is connected to a contact block prepared specifically for earthing connections

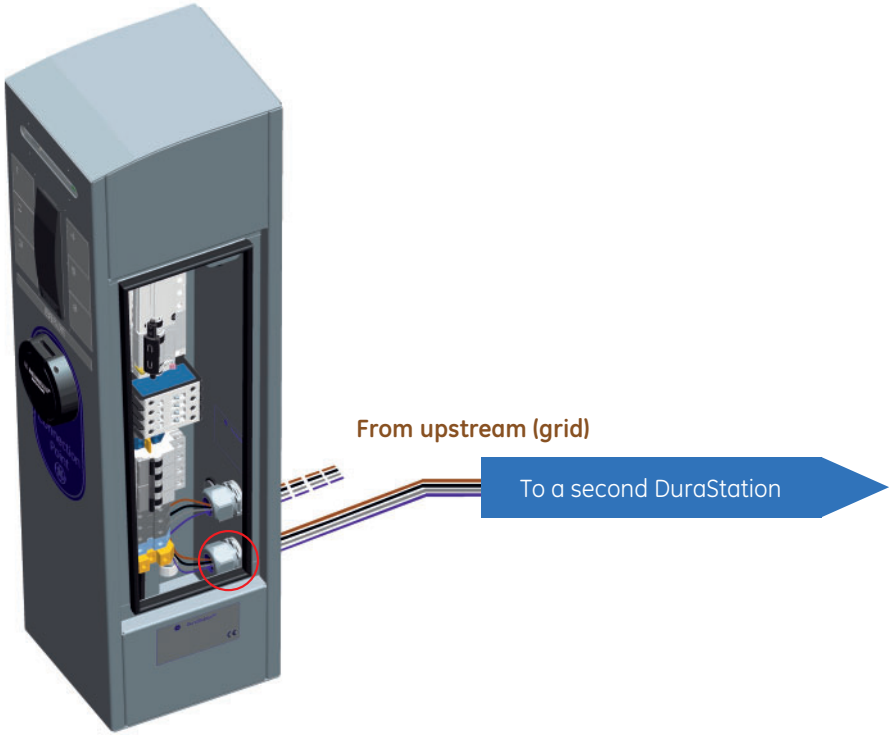


Note: To connect the DuraStation in series with a second DuraStation (on a single power source), connect the outgoing wires to the terminal blocks, as shown below.

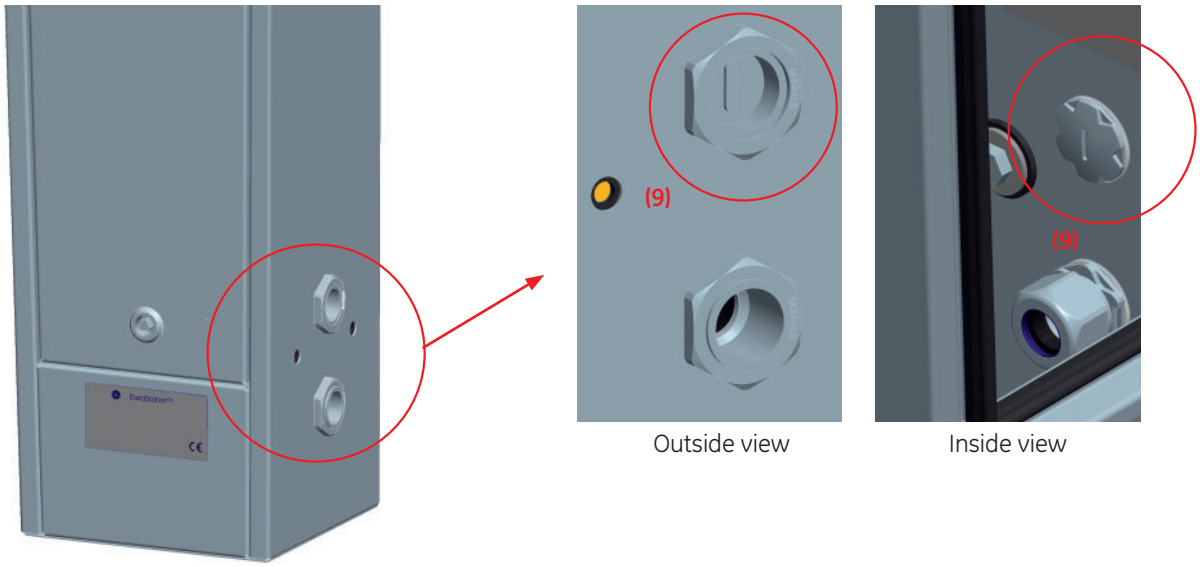
Refer to table 4 for details about admissible wire cross sections.



For this model, an extra outlet is provided in the back side of the DuraStation. It is used in case of a connection in series with a second DuraStation, as it is shown.



If the DuraStation is not connected to a second DuraStation, a Screw Plug (9) is used to close the additional outlet, maintaining the appropriate IP protection rating of the system (IP54).



Outside view

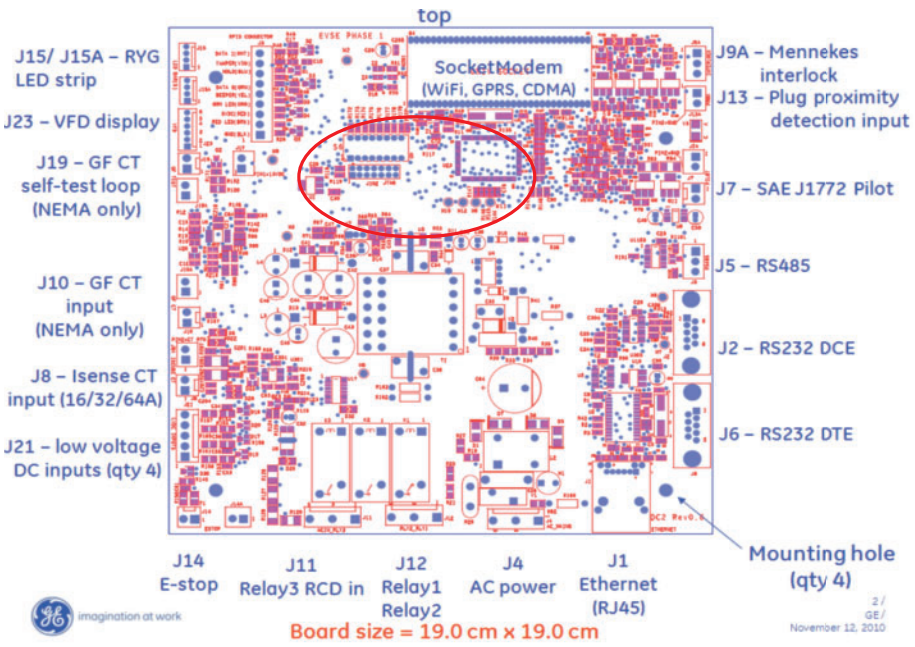
Inside view

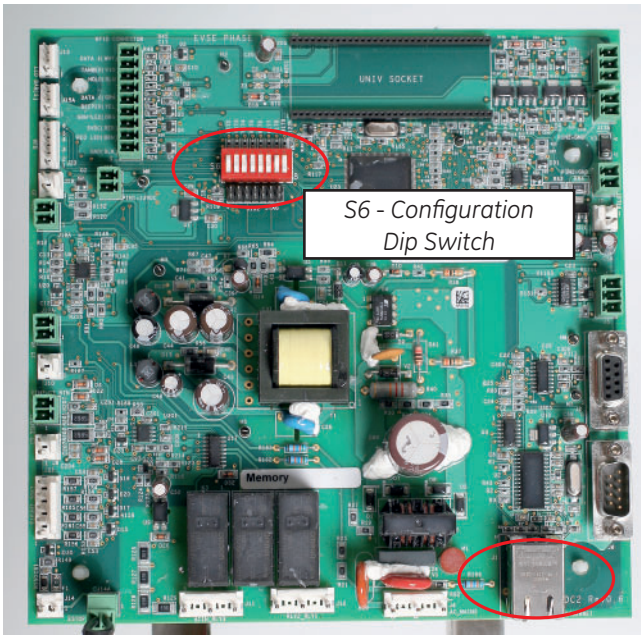
* Refer to "Charging Station Maintenance Procedures" manual for more details about replacement procedures in the cable gland or screw plug.

6. Controller Settings

Configuration Switch Settings

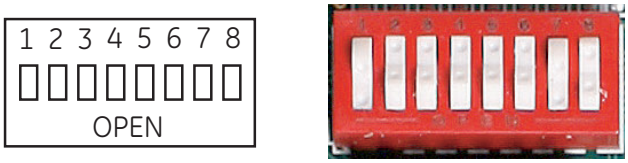
Using the configuration dip-switch S6, the controller can be placed into the desired operational mode.


top
J15/ J15A – RYG LED strip
J23 – VFD display
J19 – GF CT self-test loop (NEMA only)
J10 – GF CT input (NEMA only)
J8 – Isense CT input (16/32/64A)
J21 – low voltage DC inputs (qty 4)
SocketModem (WiFi, GPRS, CDMA)
J9A – Mennekes interlock
J13 – Plug proximity detection input
J7 – SAE J1772 Pilot
J5 – RS485
J2 – RS232 DCE
J6 – RS232 DTE
Mounting hole (qty 4)
J14 E-stop
J11 Relay3 RCD in
J12 Relay1 Relay2
J4 AC power
J1 Ethernet (RJ45)
imagination at work
Board size = 19.0 cm x 19.0 cm



The configuration dip switch has positions 1 thru 8

The picture below depicts an example of all CLOSED dip switch positions.



Pushed down on "number" side is the CLOSED position

The correct dip switch settings depend on the DuraStation model:

Current rating	1	2	3	4	5	6	7	8
EVS-PE16A1PX-X	OPEN	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED*
EVS-PE32A3PX-X	OPEN	OPEN	CLOSED	OPEN	CLOSED	CLOSED	CLOSED	CLOSED*

These 7 settings are configured by production and shall not be changed.

***** Switch 8 is used to determine the Operational Mode of the Controller

Current rating	8 position
Normal mode	CLOSED
Configuration mode	OPEN

7. Network Setup Instructions

This chapter details design recommendations for a GE EV Charging Station Network Infrastructure.

Network setup is required for installations that use RFID authentication. It is not required for DuraStation that do not use RFID authentication.

This section of the installation document covers the options for connecting the charging stations with a PC hosting the EV100 GE EV Charging Station Manager application software.

7.1. Firewall and security considerations

- Firewall.

Any firewall used to provide isolation from the charging station network to any other network should, at a minimum, provide "Statefull Packet Inspection".

Anything less would not provide acceptable security and protection. SOHO firewalls are available that provide this capability but there are some which do not.

Any firewall used for a DMZ environment should be a business class system (i.e. Cisco ASA, Checkpoint, SonicWall, etc) and provide a true DMZ capability. Typical SOHO firewalls do NOT provide true DMZ capabilities.

GE supports the use of the Cisco ASA5505 firewall and provides settings for its use in this scenario.

- Physical Security.

Physical security is a necessary consideration in any installation of this type. There should be physical controls to reduce the probability of a malicious entity's chances of gaining access to any area of the system.

Network, maintenance access and power connections should be kept secured, i.e. all connections, behind an access panel or door with a keyed lock to limit access. This door or access panel should be strong (metal as a suggestion) and the lock should be of a type that is not commonly available to the general public.

All wiring should be enclosed in conduit meeting the local electrical and communications building codes.
And all conduits should be firmly attached to the secured "box" where the communications are terminated within the charging station.

7.2. Controller configuration

7.2.1. Introduction

The Configuration Server Interface is used to make modifications to the network settings and to certain operation parameters of the charging station controller.

The controller will boot into a default configuration. The network defaults will need to be changed in order to accommodate the decisions in choosing the stand-alone or fire-walled configuration (described in sections 7.3.1. and 7.3.2.) and to avoid conflicts with the installation of subsequent controllers.

Note: Each DuraStation needs to be configured individually using a service PC or laptop during the installation and setup of the controllers.

7.2.2. Prepare service laptop or PC

Action required !

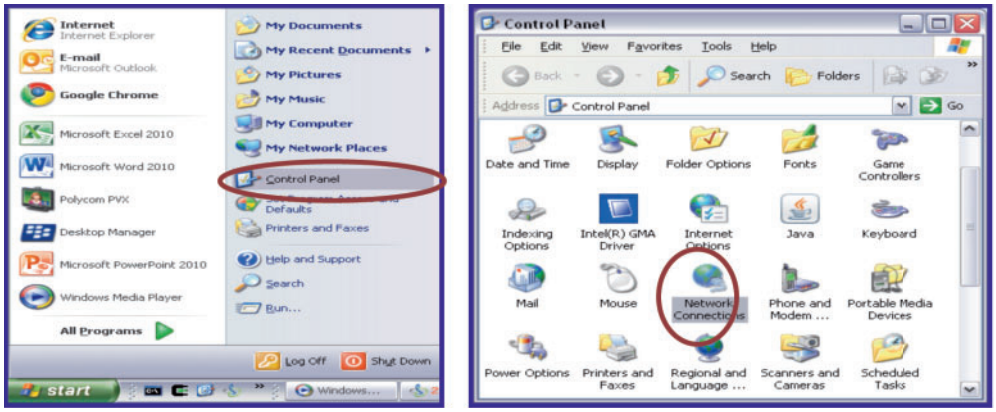
In order to set up your service laptop or PC, make sure you have full Windows Administrator rights.

- Disable any firewalls and all other Ethernet and WiFi connections for the duration of the setup.
- Make sure no DuraStation is connected or at least not powered during these setup changes.

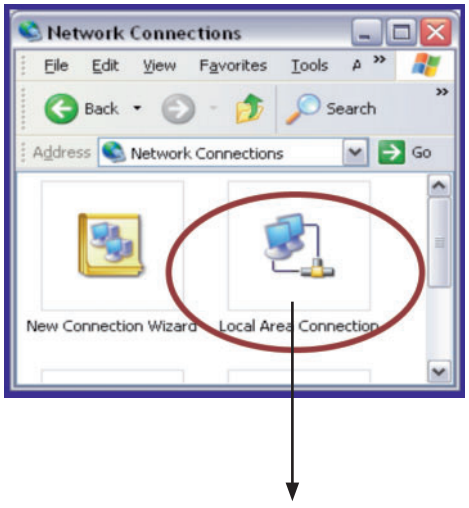
After the setup, you may want to set them back to your normal settings by undoing the same steps, enable WiFi connections and firewalls.

Then follow these steps to configure your TCP/IP settings for communication with the DuraStation during setup.

1. Open the network settings by going to **Start > Control Panel > Network connections.**

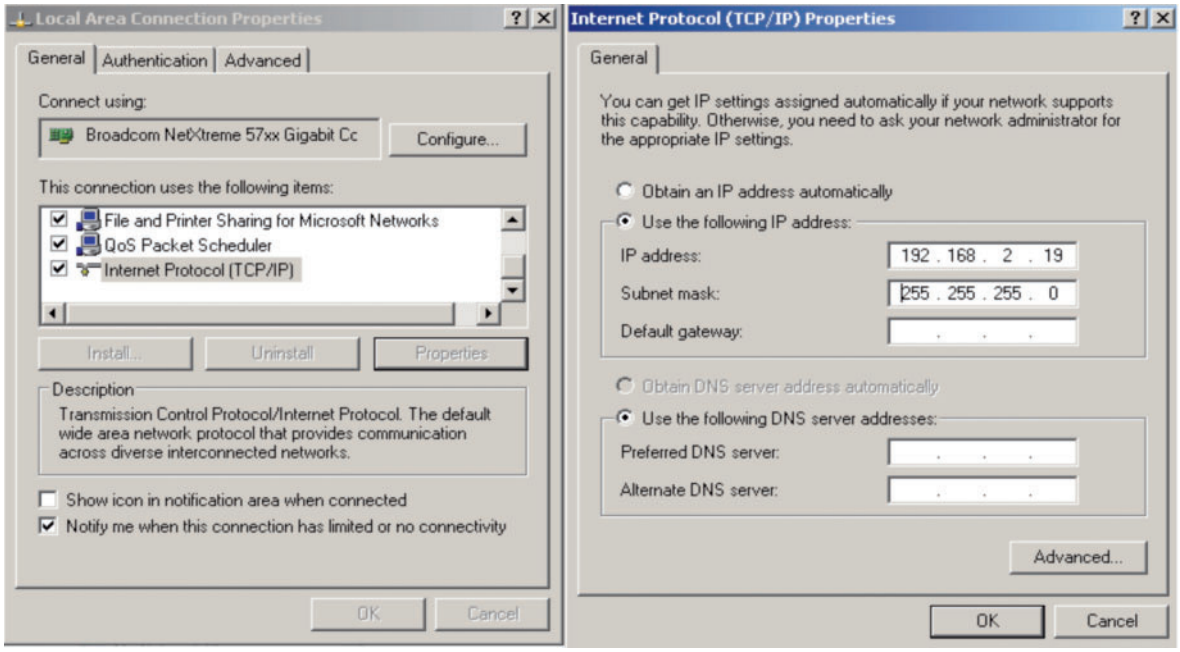


2. Right Click on **Local Area Network** and select to open the properties Window



Right click, select "Properties"

3. Scroll through the protocols used by the local area connection to find the **Internet Protocol (TCP/IP)**. Select this protocol by clicking on it and then click on the Properties button to open the window that will allow you to set the IP address and Subnet mask.


Local Area Connection Properties
General
Authentication
Advanced
Connect using:
Broadcom NetXtreme 57xx Gigabit Cc
Configure...
This connection uses the following items:
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Notify me when this connection has limited or no connectivity
OK
Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 2 . 19
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

TCP/IP settings on the test PC

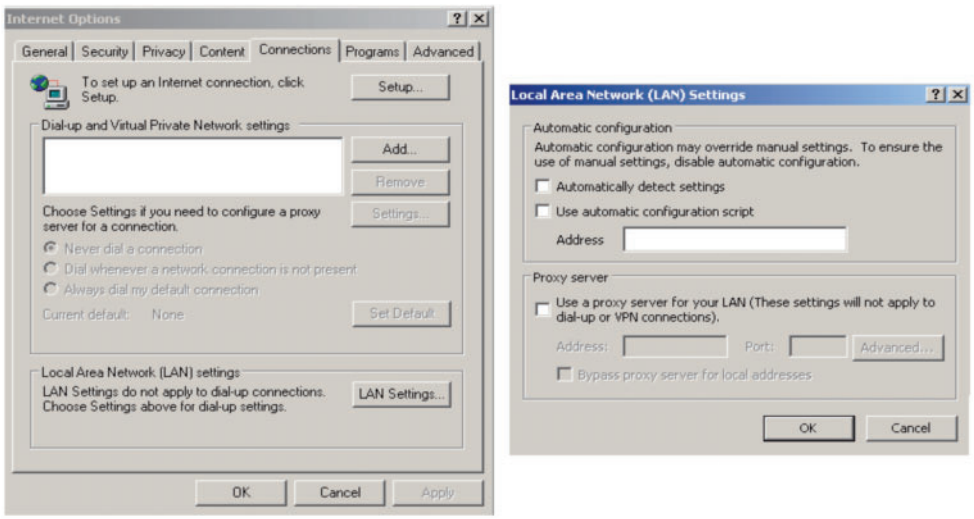
4. Click the Radio button to "Use the following IP Address" and then enter both the IP address and Subnet mask as shown.

IP Address	192.168.2.19
Subnet Mask	255.255.255.0
Default Gateway	Leave Blank

5. Click OK and close both properties windows to save your settings

Note: Proxy Settings
In Internet Explorer, open **"Tools">"Internet Options"**, click on **"Connections"** tab and then **"LAN Settings":**

- Disable *"Automatically detect settings"* and *"Use a proxy server for your LAN"* as shown.



7.2.3. Configuration server interface

This paragraph describes how to access the DuraStation Controller Configuration Server Interface and which settings can be modified.

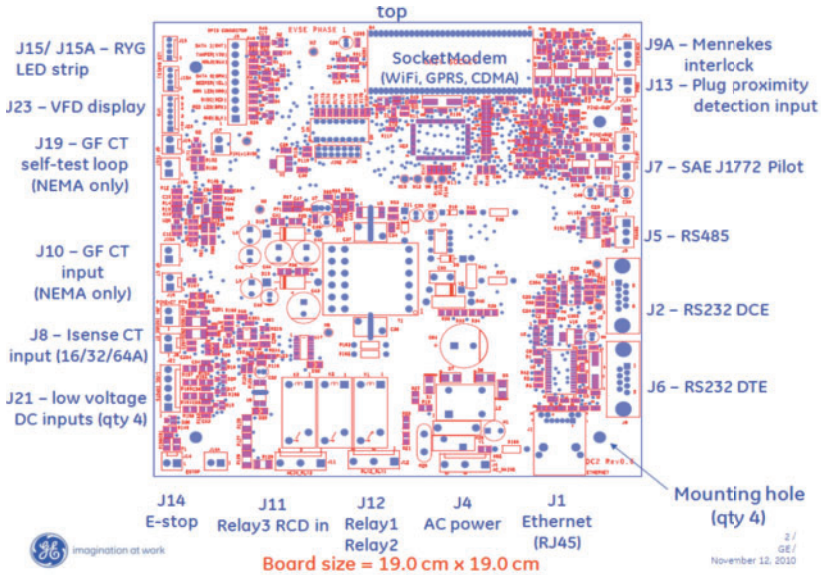
Depending on the type of network chosen, each DuraStation needs to be configured according to the instructions given in this document.

CAUTION: when manipulating the DuraStation, always make sure the power to the DuraStation is switched off before coming close or touching any parts of the interior.

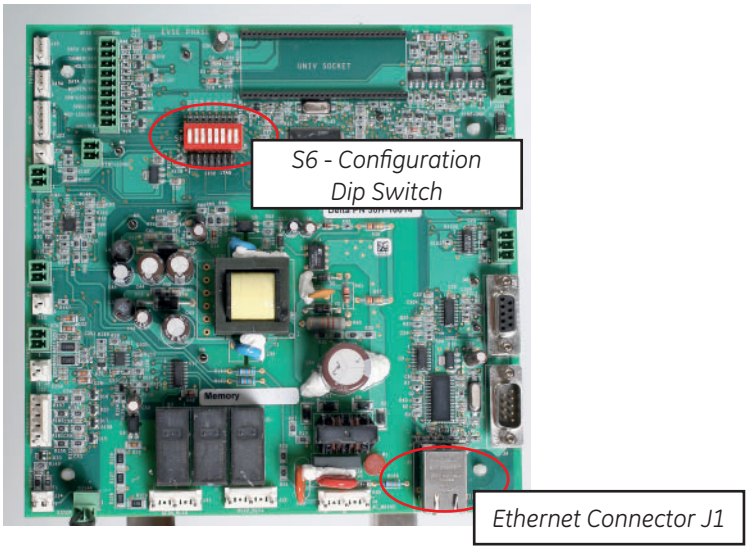
To configure each individual DuraStation

1. Switch off DuraStation main circuit breaker (Removing power from the DuraStation).
Connect the cross over cable to the DuraStation controller Ethernet port J1 and the other end to the service laptop Ethernet connector.

Note: It is recommended to use a crossed Ethernet cable for direct connectivity between the DuraStation and the service laptop or PC.


top
J15/ J15A – RYG LED strip
J23 – VFD display
J19 – GF CT self-test loop (NEMA only)
J10 – GF CT input (NEMA only)
J8 – Isense CT input (16/32/64A)
J21 – low voltage DC inputs (qty 4)
SocketModem (WiFi, GPRS, CDMA)
J9A – Menrekes interlock
J13 – Plug proximity detection input
J7 – SAE J1772 Pilot
J5 – RS485
J2 – RS232 DCE
J6 – RS232 DTE
Mounting hole (qty 4)
J14 E-stop
J11 Relay3 RCD in
J12 Relay1 Relay2
J4 AC power
J1 Ethernet (RJ45)
Board size = 19.0 cm x 19.0 cm

DuraStation Controller



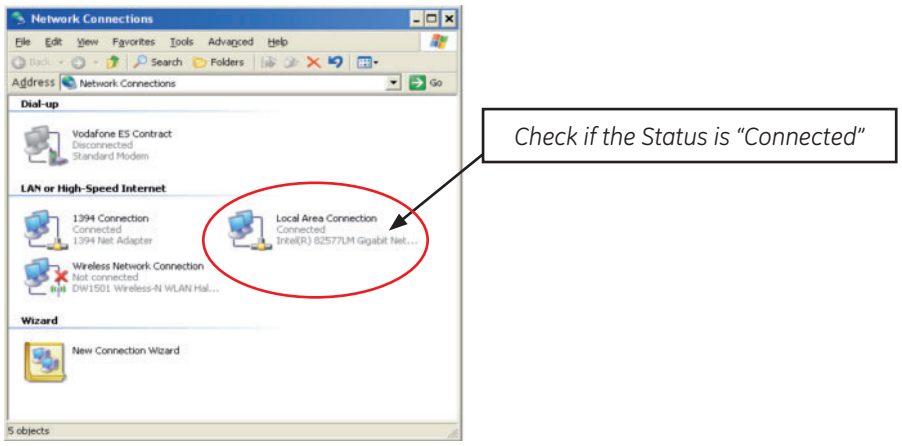
DuraStation Controller

With the power removed, change the position of switch 8 on the S6 dip switch to **OPEN for Configuration mode.** Keep the other switches in their original position.

2. Switch on the DuraStation main Circuit Breaker to power up the DuraStation in configuration mode.
a) As long as the Ethernet connection is not active, the DuraStation´s light is red.
b) As soon as the Ethernet connection is established. The DuraStation´s light continuously goes through a sequence of colors (green – yellow – red), each for 5 seconds to indicate that the unit is in configuration mode.

3. Make sure the service laptop or PC has been configured as explained in the previous chapter.

4. Check that the LAN connection is established to the service laptop or PC (Status "Connected")



5. On the service PC or laptop, open a browser window and type in the address bar the following address and press enter: **http:// 192.168.2.2**

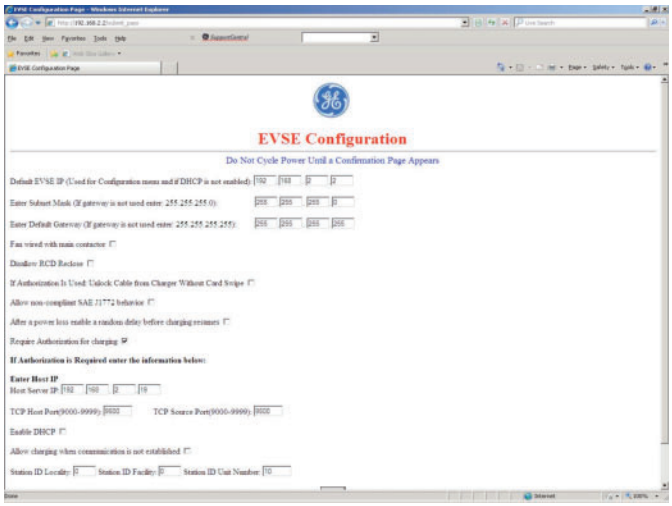
Note: Should the DuraStation in question previously have been assigned a different default DuraStation IP address, please enter that previously assigned IP address.

Note: If you have forgotten the IP address of this DuraStation, reset the controller.
(Refer to paragraph 7.5).

6. The controller will generate the following page:

Configuration Server Entry Screen

7. Pressing the "Enter Configuration" button, the following page will load:



Configuration Server Page with factory default values

Note: The default values normally do not need to be changed if the DuraStation does not use a RFID authentication mode.

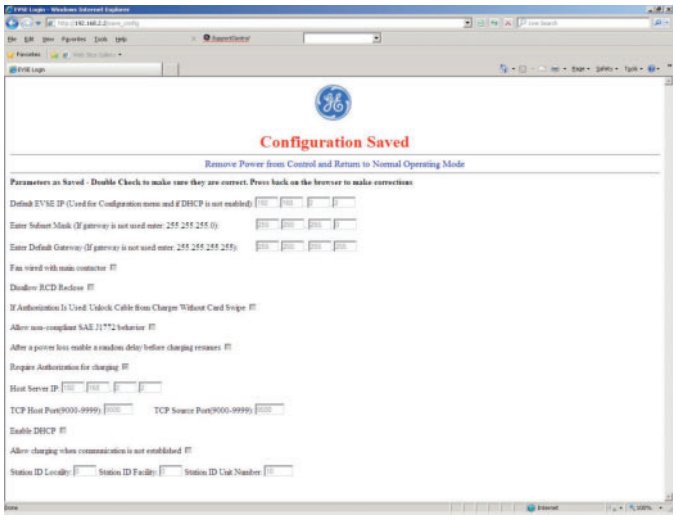
8. In the DuraStation configuration page modify settings as required.

The correct settings depend on the chosen network architecture and are described in a later chapter in detail.

There are 3 options for configuration:

- No RFID Authentication (default) (Refer to paragraph 7.4)
- RFID authentication in standalone network (Refer to paragraphs 7.3.1, 7.3.3 and 7.3.4)
- RFID authentication in firewalled network (Refer to paragraphs 7.3.2, 7.3.3 and 7.3.4)

9. After the desired settings are configured click on "Save". The following page will load:



Configuration Server Confirmation Page

Note: The defaults values need to be changed depending on the network architecture.

Close the browser page and remove power to the DuraStation controller.

10. With Power removed, change the position of switch 8 on the S6, to **CLOSED for Normal mode.** Keep the other switches in their original position.

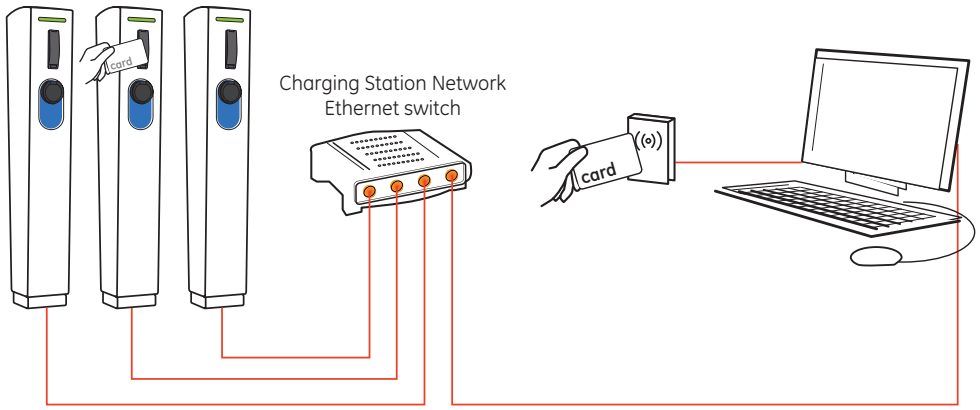
7.3. Recommended network designs for RFID authentication

It is strongly recommended using one of the below network configuration. The options provide the necessary security levels for the Charging Station System network and other parts of the network.

7.3.1. Option 1: Stand-alone network configuration

In this design the charging station network and its associated host system are not connected to the customer network and it is independent.

This provides the greatest protection to the customer network, as there is no communication between the customer network and the charging station network.



Network Setup Option 1 – Stand-alone Configuration

Required components:
- Host Application PC
- Cat 5 Network Cables
- Ethernet Switch
- Card reader, accessory with ref. codes 411107 or 411108 from GE catalogue (Note: only the GE enrollment readers work with this application)

STEP 1: DuraStation Controller Settings
Follow the instructions in the previous Controller Configuration section to set up **each individual DuraStation** according to the following settings:

Action required !
- DuraStation IP
On initial power up the DuraStation IP address will default to 192.168.2.2
This must be changed to an appropriate address based on the network configuration. Failure to change the IP address setting will impact the ability to bring up subsequent charging stations on the network due to IP address collisions.

Assign IP addresses to the charging stations beginning with 192.168.2.22.

As additional charging stations are added increment the last octet, so that they are numbered in consecutive order: 192.168.2.22, 192.168.2.23, 192.168.2.24, and so on.

Note: It is recommended to keep track of the different IP settings for each DuraStation by recording them on the form found on the final page of this document.

Action required !
- Subnet Mask
Set the Subnet Mask to 255.255.255.0

Action required !
- Default Gateway
Set the gateway to 0.0.0.0 (blank)

- Fan wired with contactor
Cars that require ventilation for charging must have the fan wired with main contactor and this option enabled.

- Disallow RCD Reclose
If this option is selected then charging is stopped for the vehicle at the first ground fault occurrence.

- If Authorization is Used: Unlock Cable from Charger Without Card Swipe
By default the charging station requires a card swipe to unlock the charging cable from the charger. When this option is selected the cable is unlocked without a card swipe.

- Non-compliant SAEJ1772 behavior
Some earlier EV models equipped with a retrofit kit have a Pilot signal feedback that does not comply with the SAE-J1772 / IEC61851 standard.
By default this option is not enabled.

- After a power loss enable a random delay before charging resumes
If there is a large number of DuraStation on a local feed, consider checking this box to enable a gradual increase in load once the power is restored.

Action required !
- Require Authorization for charging
RFID authentication requires this check box to be checked on all DuraStation in the network.

Note: In the case of any modification to the "Require authentication for charging" option, or after a reset or replacement of the controller, the Station ID must be modified to a new ID not previously used on this network to avoid any transaction data being lost.

- Host IP address
By default, the IP address is set to 192.168.2.19. Unless there is a collision with another setup, it is recommended to keep this host address.
The network PC will need to be configured accordingly in the TCP/IP settings, as explained later in Step 2.

Note: The Host IP address on all DuraStation in the network, must match the TCP/IP settings of the network PC.

Action required !
- TCP Host Port & TCP Source Port
Change the value to **9500 for both the Host and Source Port** to match the default value for the EV100 Application software. Unless there is a collision by using this Port on the host PC, it is recommended to configure the EV100 application to use port 9500 (by default) and all DuraStations in the network to also use port 9500 (factory default is 9000).

Note: The port number on all DuraStations in the network must match the port number defined during the EV100 Software installation.

- Enable DHCP
Keep this option disabled at all times.

- Allow charging if communication is not established
By default, this option is not selected. Checking this box will modify the behavior of the DuraStation in the case of network loss:

- If unchecked, the DuraStation **will not allow** charging of a car in the case of network communication failure between the DuraStation and the Host PC.
- If checked, the DuraStation **will allow** charging of a car despite network communication failure.

Action required !

- Station ID information

Fill in the Station ID information to distinguish DuraStation from each other in the EV100 Application. It is important to give each DuraStation a unique ID.

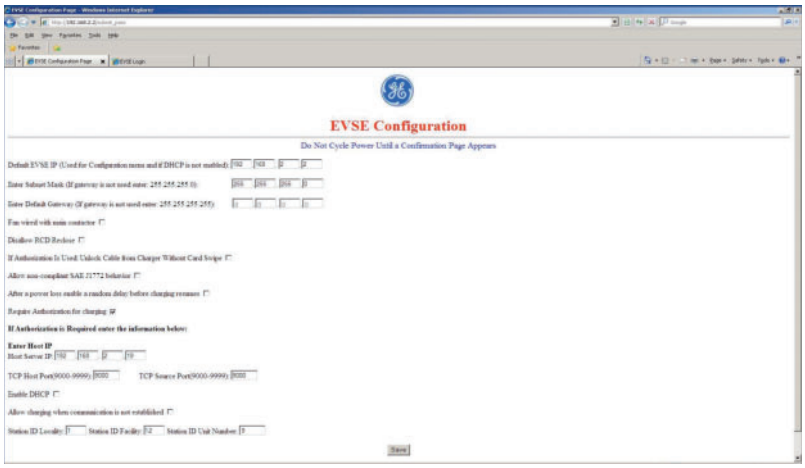
IDs will appear in the EV100 Application in the format "1-12-9" (e.g. Locality ID = 1, Facility ID = 12, Unit number = 9).

Note: The Station ID information is how the EV100 application distinguishes between stations in the same network. Make sure you assign different values to each DuraStation.

Note: In the case of any modification to the "Require authentication for charging" option, or after a reset or replacement of the controller, the Station ID must be modified to a new ID not previously used on this network to avoid any transaction data being lost.

After the desired settings are configured click on "Save.

Repeat this procedure for all DuraStations in the network.

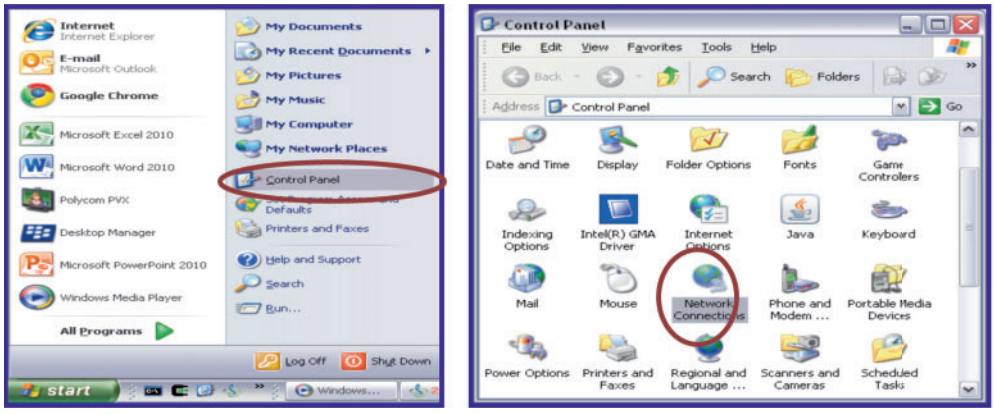


STEP 2: Host PC Settings

In order to set up your Host PC, make sure you have full Windows Administrator privileges.
Disable any firewalls and all other Ethernet and WiFi connections on this PC.

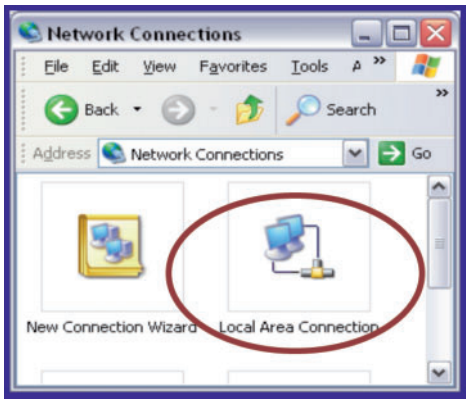
Then following steps are used to configure your TCP/IP settings for communication with all DuraStations connected to your network.
The NIC on the host PC should be connected to the charging station network Ethernet switch.

To configure the network settings on a PC running Windows XP or Windows 7, click the Start button and open the Control Panel. Open the Network Connections application.



Network Connections

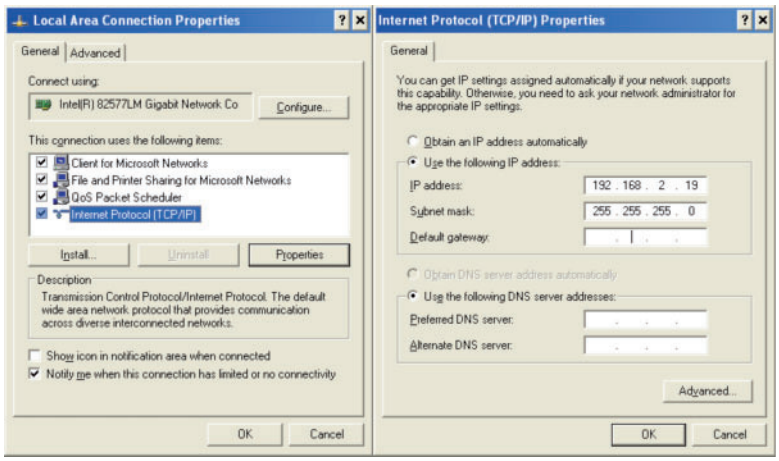
This displays the connections currently found on the PC.
Select the icon for the Local Area Connection and double click to open the properties for this NIC.



LAN Network Connection

Scroll through the protocols used by the local area connection to find the Internet Protocol (TCP/IP).

Select this protocol by clicking on it and then click on the Properties button to open the window that will allow you to set the IP address and Subnet mask.


Local Area Connection Properties
General
Advanced
Connect using:
Intel(R) 82577LM Gigabit Network Co
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Notify me when this connection has limited or no connectivity
OK
Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 2 . 19
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Network Settings Option 1 (See the Configuration Server Interface section)

Click the Radio button to “Use the following IP Address” and then enter both the IP address and Subnet mask as shown.

Set the Ethernet IP address, Subnet Mask, and Default Gateway to the following settings:

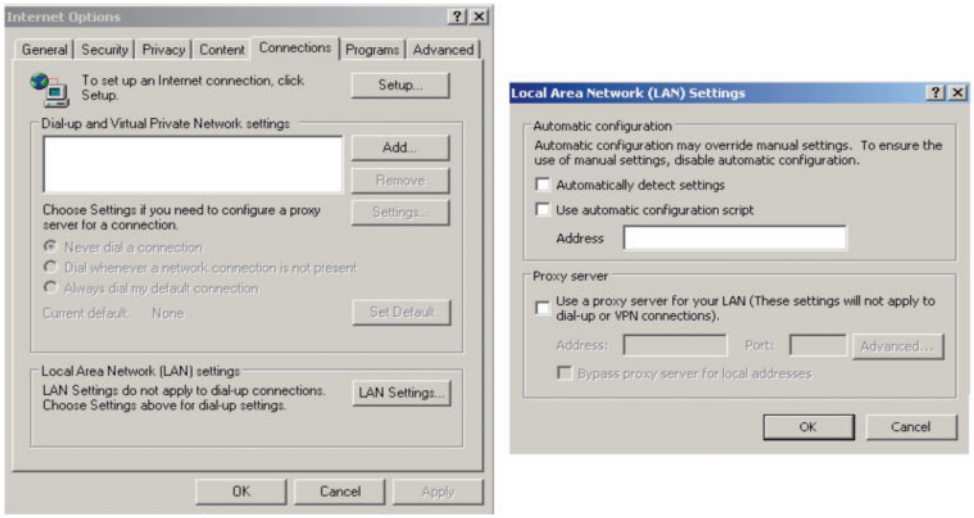
Host IP Address	192.168.2.19
Host Subnet Mask	255.255.255.0
Host Default Gateway	Leave Blank

Click on OK and close both windows to save your settings.

Note: The IP address above must match the Host IP address entered in the configuration page of all connected DuraStations. By default, this is 192.168.2.19.

Note: Reboot PC to finalize with the configuration.

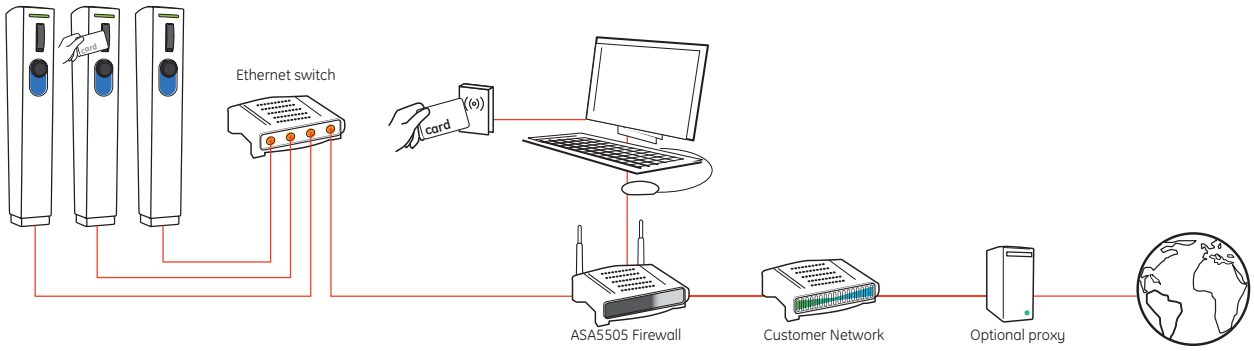
Note: Proxy Settings
In Internet Explorer, open **"Tools">"Internet Options"**, click on **"Connections"** tab and then **"LAN Settings":**
- Disable *"Automatically detect settings"* and *"Use a proxy server for your LAN"* as shown.



7.3.2. Option 2: Charging Station Network isolated from Customer Network with Host System in a DMZ.

In this design, the charging stations are isolated from the customer network and the host system is within a DMZ providing isolation from BOTH the Charging Station Network AND the Customer Network. This minimizes the risks of someone compromising the charging station network or the host system.

The host system is within a DMZ providing isolation from both the charging station network and the customer network and communicates with the charging stations via a rule or access control list entry which allows communications between ONLY the host system and the charging stations. A rule or rules would be established to permit specific systems on the customer network to access the host system.



Network Setup Option 2 –Networked Configuration with DMZ

This provides greater protection and isolation than the previous designs in this document. It's not perfect as the charging stations need to initiate some of the communications to the host system, so a rule or ACL will have to be in place on the firewall to allow this communications. But it also isolates that communications from the customer network. A properly configured firewall will provide greatly enhanced protection to the customer network.

Required components:
- Host application PC
- Cat 5 network cables
- Ethernet switch
- ASA5505 security plus firewall
- Card reader, accessory with ref. codes 411107 or 411108 from GE catalogue (Note: only the GE enrollment readers work with this application)

STEP 1: DuraStation Controller Settings
Follow the instructions in the Controller Configuration section to set up each individual DuraStation according to the following settings:

Action required !

- DuraStation IP

On initial power up the DuraStation IP address will default to 192.168.2.2.This must be changed to an appropriate address based on the network configuration. Failure to change the IP address setting will impact the ability to bring up subsequent charging stations on the network due to IP address collisions.

Check with the local network administrator to determine which address ranges are currently in use at the site.
It is necessary to select ranges for the charging stations that are distinct from those currently in use to avoid IP address conflicts.
If the 172.25.x.x. range is not in use the following settings should be implemented.

Set the DuraStation Ethernet IP address, Subnet Mask, and Default Gateway to the following settings:

DuraStation IP Address 172.25.0.xx
DuraStation Subnet Mask 255.255.255.0
DuraStation Default Gateway 172.25.0.1

Assign IP addresses to the charging stations beginning with 172.25.0.12. As additional charging stations are added increment the last octet, so that they are numbered in consecutive order starting from 12. (Examples: 172.25.0.12, 172.25.0.13, 172.25.0.14, and so on).
All of the charging stations will use the same subnet mask 255.255.255.0 with the default gateway set to 172.25.0.1

Alternatively, if that range is in use, on the assumption that the 172.26.0.x. range is available use these alternate settings:

DuraStation IP Address 172.26.0.xx
DuraStation Subnet Mask 255.255.255.0
DuraStation Default Gateway 172.26.0.1

This alternate setting will require the assignment of IP addresses to the charging stations beginning with 172.26.0.12
As additional charging stations are added increment the last octet, so that they are numbered as for example: 172.26.0.12, 172.26.0.13, 172.26.0.14, and so on. All of the charging stations will use the same subnet mask 255.255.255.0 with the default gateway set to 172.26.0.1.

Note: It is recommended to keep track of the different IP settings for each DuraStation by recording them on the form found on the final page of this document.

- Subnet Mask

See above

- Default Gateway

See above

- Fan wired with contactor

Cars that require ventilation for charging must have the fan wired with main contactor and this option enabled.

- Disallow RCD Reclose

If this option is selected then charging is stopped for the vehicle at the first ground fault occurrence.

- If Authorization is Used: Unlock Cable from Charger Without Card Swipe

By default the charging station requires a card swipe to unlock the charging cable from the charger.
When this option is selected the cable is unlocked without a card swipe.

- Non-compliant SAEJ1772 behavior
Some earlier EV models equipped with a retrofit kit have a Pilot signal feedback that does not comply with the SAE-J1772 / IEC61851 standard.

By default this option is not enabled.

- After a power loss enable a random delay before charging resumes
If there is a large number of DuraStations on a local feed, consider setting this box to enable a gradual increase in load once the power is restored.

Action required !
- Require Authorization for charging
RFID authentication requires this check box to be checked on all DuraStations in the network.

Note: In the case of any modification to the "Require authentication for charging" option, or after a reset or replacement of the controller, the Station ID must be modified to a new ID not previously used on this network to avoid any transaction data being lost.

Action required !
- Host IP address
By default, the IP address is set to 192.168.2.19 and needs to be changed to one of the following options depending on which address range is used.
- 172.25.1.100 in case of the DuraStation IP range being 172.25.0.xx
- 172.26.1.100 in case of the DuraStation IP range being 172.26.0.xx

The network PC will need to be configured accordingly in the TCP/IP settings, as explained below in Step 2.

Note: Make sure the Host PC is configured according to the same IP address settings as entered in the DuraStation configuration server page.

Action required !
- TCP Host Port and TCP Source Port
Change the value to **9500 for both the Host and Source** Port to match the default value for the EV100 Application software. Unless there is a collision by using this Port on the host PC, it is recommended to configure the EV100 application to use port 9500 (by default) and all DuraStations in the network to also use port 9500 (factory default is 9000).

Note: The port number on all DuraStations in the network must match the port number defined during the EV100 Software installation.

- Enable DHCP
Keep this option disabled at all times.

- Allow charging if communication is not established
By default, this option is not selected. Checking this box will modify the behavior of the DuraStation in the case of network loss:

- If unchecked, the DuraStation **will not allow** charging of a car in the case of network communication failure between the DuraStation and the Host PC.
- If checked, the DuraStation **will allow** charging of a car despite of network communication failure.

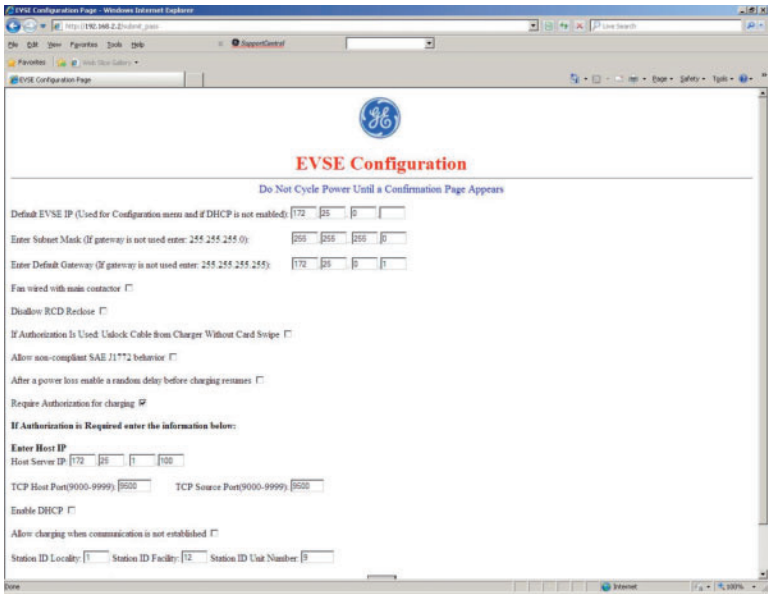
Action required !
- Station ID information
Fill in the Station ID information to distinguish DuraStation from each other in the EV100 Application. It is important to give each DuraStation a unique ID.
IDs will appear in the EV100 Application in the format "1-12-9" (e.g. Locality ID = 1, Facility ID = 12, Unit number = 9).

Note: The Station ID information is how the EV100 application distinguishes between stations in the same network. Make sure you assign different values to each DuraStation.

Note: In the case of any modification to the "Require authentication for charging" option, or after a reset or replacement of the controller, the Station ID must be modified to a new ID not previously used on this network to avoid any transaction data being lost.

After the desired settings are configured click on "Save.

Repeat this procedure for all DuraStations in the network.

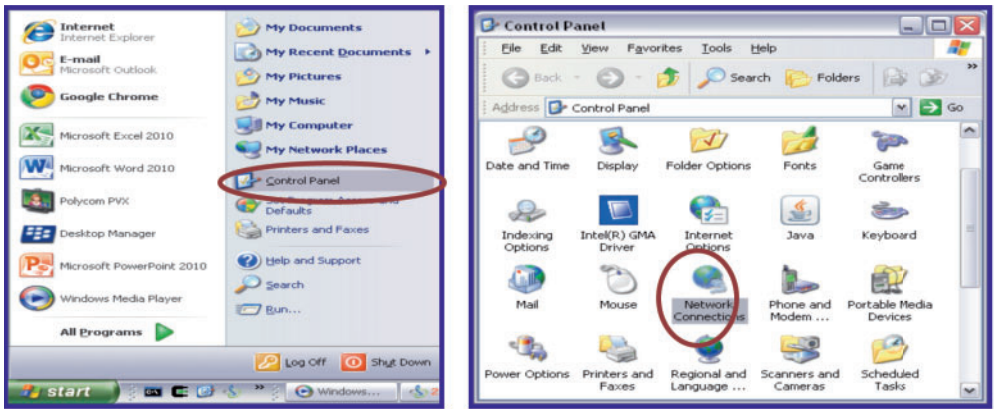


STEP 2: Host PC Settings:
In order to set up your Host PC, make sure you have full Windows Administrator privileges. Disable any firewalls and all other Ethernet and WiFi connections on this PC.

Then following steps are used to configure your TCP/IP settings for communication with the DuraStation.

The NIC on the host PC should be connected to the ASA5505 firewall port number 0/6. A network Cable connects port 0/0 on the firewall to port 1 on the Charging Station Network Ethernet Switch.

To configure the network settings on a PC running Windows XP click the Start button and open the Control Panel. Open the Network Connections application.

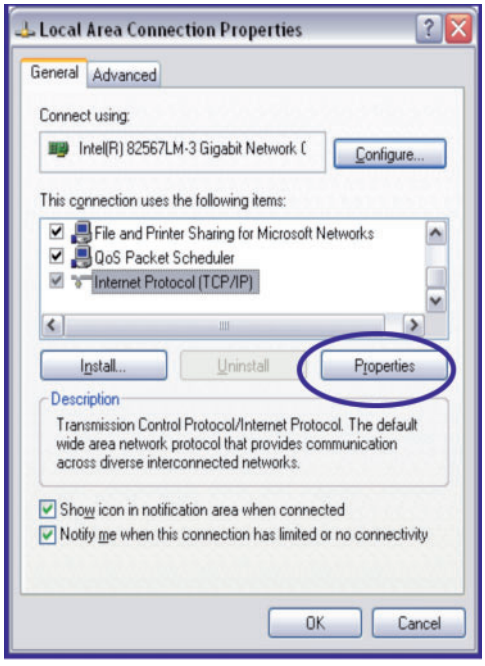


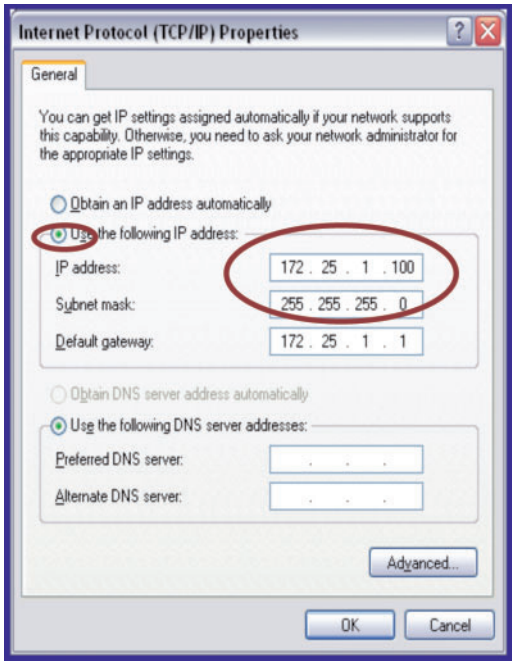
Network Connections

This displays the connections currently found on the PC. Select the icon for the Local Area Connection and double click to open the properties for this NIC.

LAN Network Connection

Scroll through the protocols used by the local area connection to find the Internet Protocol (TCP/IP). Select this protocol by clicking on it and then click on the Properties button to open the window that will allow you to set the IP address and Subnet mask.




Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
172 . 25 . 1 . 100
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
172 . 25 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Network Settings Option 2 (See the Configuration Server Interface section)

Click the Radio button to “Use the following IP Address” and then enter both the IP address and Subnet mask as shown.

Action required !

Depending on the choice of IP address range above for the configuration of the DuraStations in the network, set the Ethernet IP address, Subnet Mask, and Default Gateway to the corresponding settings:

IP Address	172.25.1.100		IP Address	172.26.1.100
Subnet Mask	255.255.255.0	or	Subnet Mask	255.255.255.0
Default Gateway	172.25.1.1		Default Gateway	172.26.1.1

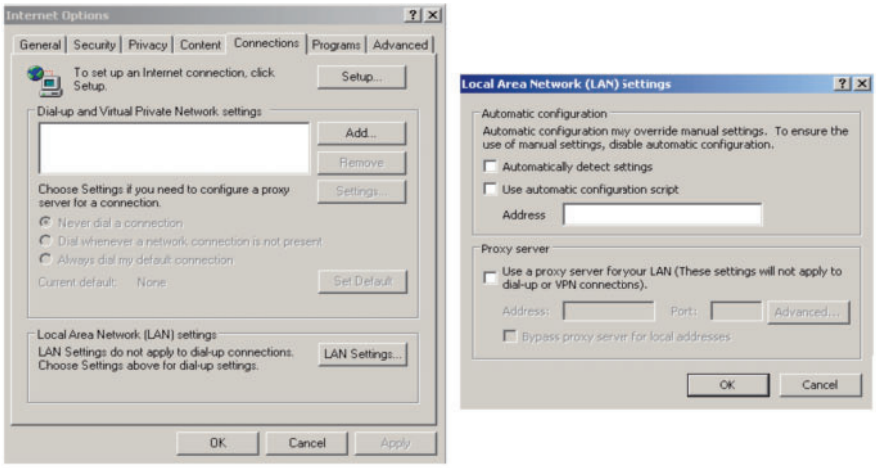
Click on OK and close both windows to save your settings.

Note: Make sure the Host PC is configured according to the same IP address settings as entered in the DuraStation configuration server page.

Note: Reboot PC to finalize with the configuration.

Note: Proxy Settings
In Internet Explorer, open **"Tools">"Internet Options"**, click on **"Connections"** tab and then **"LAN Settings":**

- Disable *"Automatically detect settings"* and *"Use a proxy server for your LAN"* as shown.



7.3.3. Install EV100 RFID Host Application Software

After the controller configuration of all DuraStations and the host PC's TCP/IP setups have been completed, the Host Application EV100 for RFID authentication needs to be installed.
In order to install EV100 application, make sure you have full Windows Administrator privileges.

The detailed installation steps are defined in the manual provided with the application on CD 1.
"EV100 – GE EV Charging Station Manager Application".

For trouble shooting, please also refer to to the above noted manual.

Note: In order to install EV100 application, make sure you have full Windows Administrator privileges.

Before installing the application software, all DuraStations in the network must to be configured, as defined in previous paragraphs 7.3.1 and 7.3.2.

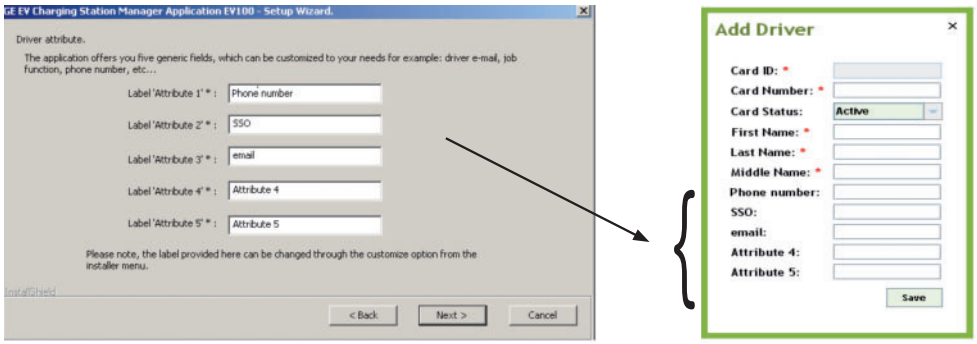
1. Power up the network switch and keep it connected to the Host PC at all times during the software installation and subsequent operation.

Note: Make sure the switch is always powered and connected to the Host PC. In case of a direct connection from the DuraStation to a Host PC without interposed Ethernet switch, the DuraStation needs to be powered each time the Host PC is powered up, or the listener service is manually restarted.

2. Install the software

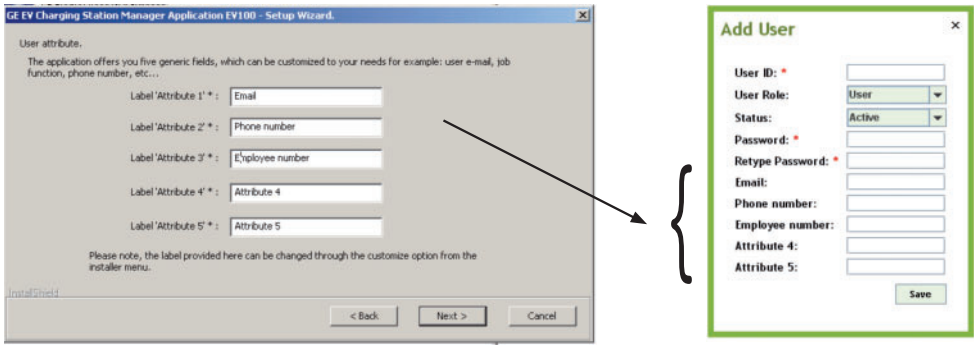
It is strongly recommended to install the software in the default location.
- Insert CD 1 of the EV100 Application into the CD ROM and launch setup.exe
- Follow instructions and keep default Port settings of 3306
- Once finished with CD 1, insert CD 2 of the EV100 Application and launch setup.exe
- Follow instructions and keep default port settings at 9500 (unless another port has been set up in the individual DuraStation stations on the configuration server page)

- Add optional field descriptions for user identification, such as phone number, e-mail address, etc. which shall be stored alongside the RFID identifier.


GE EV Charging Station Manager Application EV100 - Setup Wizard.
Driver attribute.
The application offers you five generic fields, which can be customized to your needs for example: driver e-mail, job function, phone number, etc...
Label 'Attribute 1' * : Phone number
Label 'Attribute 2' * : SSO
Label 'Attribute 3' * : email
Label 'Attribute 4' * : Attribute 4
Label 'Attribute 5' * : Attribute 5
Please note, the label provided here can be changed through the customize option from the installer menu.
< Back
Next >
Cancel
Add Driver
Card ID: *
Card Number: *
Card Status: Active
First Name: *
Last Name: *
Middle Name: *
Phone number:
SSO:
email:
Attribute 4:
Attribute 5:
Save

- Driver Attributes Menu -

- Software Driver Menu -


GE EV Charging Station Manager Application EV100 - Setup Wizard.
User attribute.
The application offers you five generic fields, which can be customized to your needs for example: user e-mail, job function, phone number, etc...
Label 'Attribute 1' * : Email
Label 'Attribute 2' * : Phone number
Label 'Attribute 3' * : Employee number
Label 'Attribute 4' * : Attribute 4
Label 'Attribute 5' * : Attribute 5
Please note, the label provided here can be changed through the customize option from the installer menu.
< Back
Next >
Cancel
Add User
User ID: *
User Role: User
Status: Active
Password: *
Retype Password: *
Email:
Phone number:
Employee number:
Attribute 4:
Attribute 5:
Save

- User Attributes Menu -

- Software User Menu -

7.3.4. Setup Validation

After the successful installation of the DuraStation network and EV100 Software, validate the installation by following these steps:

1. Check that the EV100 Listener Service is running

Note: A change of the Host PC IP address while the listener service is running requires a restart of the listener service or a reboot of the host PC. For detail instructions please use the User Manual document included on CD 1.

2. Launch the EV100 Application

Start the EV100 Application and log in. **Default login is "admin" and the password "admin".**
You should now see the stations appear in the list with a green status after at most 5 min.

After at most 5min, all DuraStations in the network should appear in the list. Check that all DuraStations are present and listed with their correctly configured Station ID.
Should one of the DuraStations not appear in the list, power that station down and up again.

Click on "Home" to refresh the screen at any time.

3. Enroll driver

Note: "Users" are user accounts for the EV100 application with associated login and password. "Drivers" are EV drivers and are enrolled for usage of the DuraStation infrastructure and identify themselves with RFID cards.

In order to enroll new drivers, follow these steps or detailed instructions included in the Help>Add driver section

- Plug in the enrolment card reader (accessory from the GE, catalogue) into the USB port
- Wait for the USB driver installation to successfully complete
- Click on "Add" to open the Add New Driver dialog box
- Click on "OK" then hold the RFID card of the new user in front of the enrolment reader for a few seconds. You should see a change in the LED on the reader itself and a hexadecimal number appear in the text field.

Note: If the keyboard is set to French or Belgium keep the CAPSLOCK ON during card ID registration. Should the output of the reader in the text field include characters other than 0-9 and A-F, set the keyboard settings of Windows to "US English".

- Fill in the remaining information.
- Add more drivers to the list. For more information, refer to the software user manual or the help file.
- You can close the application EV100, but keep the host PC connected and up and running at all times for the RFID authentication to work.

4. Check driver registration

Any driver with a registered RFID card can now use the connected DuraStation.

To activate charging, hold the RFID card in front of the reader for 2-3 seconds. Upon successful authentication of that card, the reader LED will turn green after another small delay of 2-3 seconds.

Note: For authentication to work, keep the host PC connected and up and running at all times.

7.4. Setup without RFID authentication

Some DuraStation models are not equipped with an RFID reader and are not meant to be set up in a network environment.

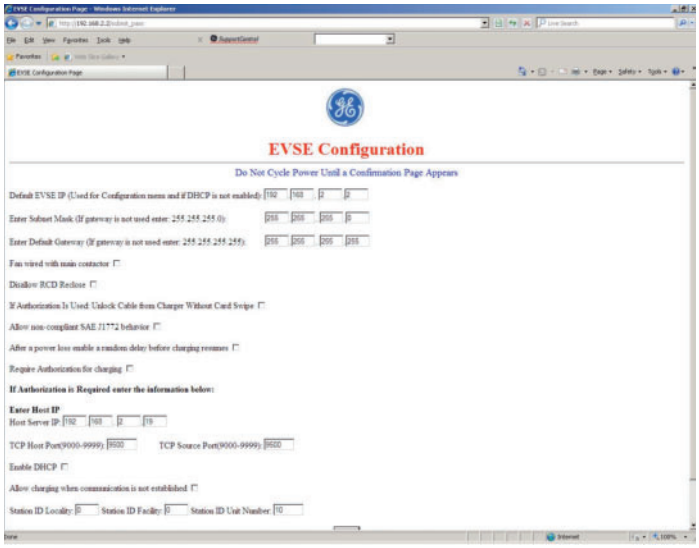
Even models with RFID can be used in a non-authentication mode.

In both cases, the DuraStation controller settings do not need to be modified from the default values.

In order to disable the RFID authentication function from a previous networked setup, it is recommended to either reset the DuraStation controller as explained in paragraph 7.5, or to reset the values on the DuraStation controller following the steps described in the configuration mode section, and set the parameters as shown.

After the desired settings are configured click on “Save”.

Note: It is recommended to keep track of the different IP settings for each DuraStation by recording them in the form found on the final page of this document.


EVSE Configuration
Do Not Cycle Power Until a Confirmation Page Appears
Default EVSE IP (Used for Configuration menu and if DHCP is not enabled):
Enter Subnet Mask (If gateway is not used enter: 255.255.255.0):
Enter Default Gateway (If gateway is not used enter: 255.255.255.255):
Fan wired with main contactor
Disallow RCD Reclose
If Authorization Is Used, Unlock Cable from Charger Without Card Swipe
Allow non-compliant SAE J1772 behavior
After a power loss enable a random delay before charging resumes
Require Authorization for charging
If Authorization is Required enter the information below:
Enter Host IP
Host Server IP:
TCP Host Port(9000-9999):
TCP Source Port(9000-9999):
Enable DHCP
Allow charging when communication is not established
Station ID Locality:
Station ID Facility:
Station ID Unit Number:

Factory default values

7.5. Reset controller to factory default

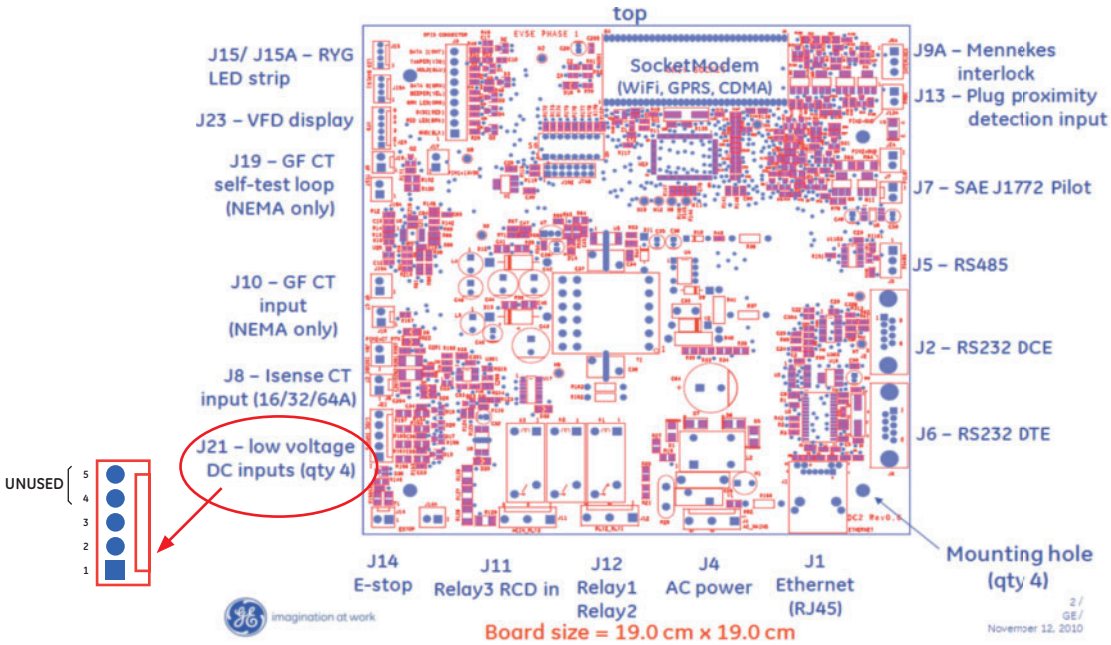
Should you have inadvertently changed to a non-default IP setting and cannot remember the IP settings, or simply reverse to default configuration for other reasons, you can reset the controller to the factory default values by following these steps.

Note: It is recommended to keep track of the different IP settings for each DuraStation by recording them on the form found on the final page of this document.

Follow the instructions below to reset the controller settings:

1. Switch off the DuraStation main breaker to remove power to the controller.

2. Disconnect connector J21 and short pins 1, 2 and 3 with a conductive connector.



3. Switch on DuraStation main breaker to supply power to the controller.

4. After a few seconds switch off DuraStation main breaker to remove power to the controller.

5. Remove the short and reconnect connector J21.

6. Switch on the DuraStation main breaker to supply power to the controller.

7. Reconfigure as desired via DuraStation controller configuration server interface. Refer to the description in the earlier chapter.

Note: In the case of a network installation with RFID authentication, after a reset of the controller, the Station ID must be modified to a new ID not previously used on this network to avoid any transaction data being lost.

7.6. Trouble shooting guide

www.gepowercontrols.com/eu/product_portfolio/GE_EV_charger/trouble-shooting.html

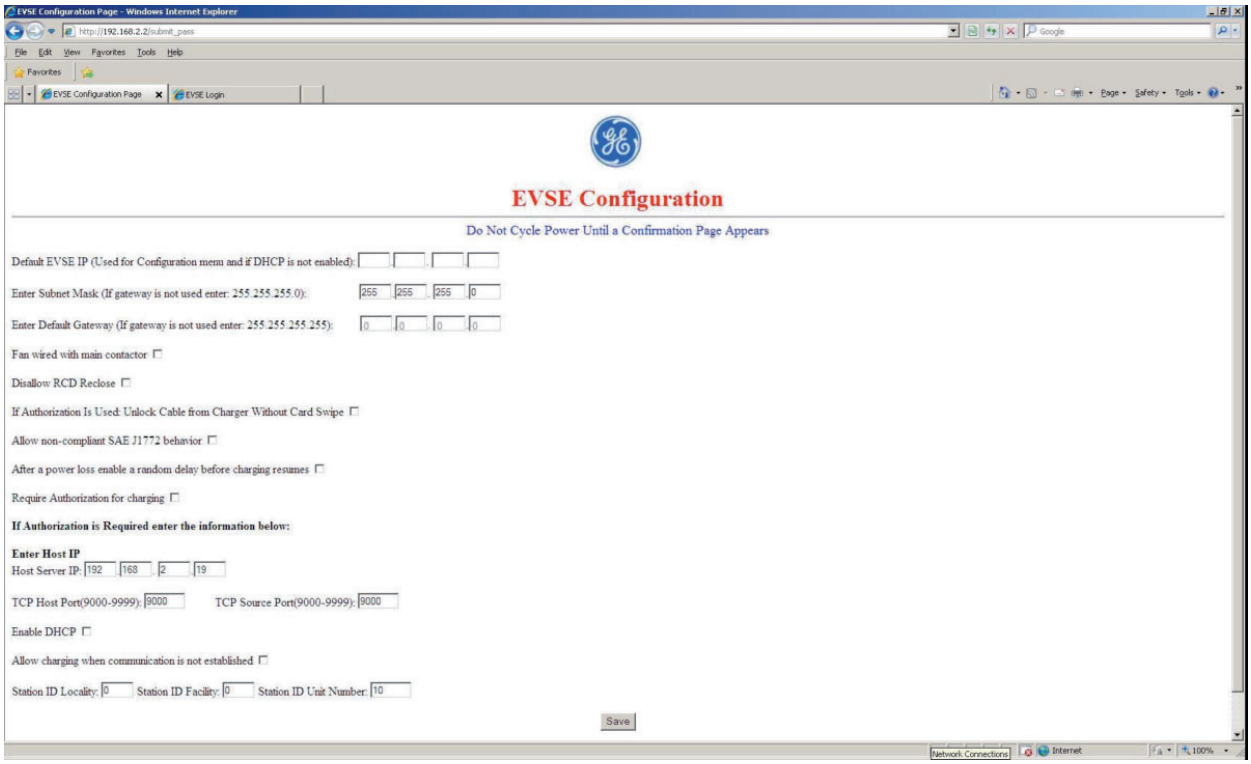
Appendix

DuraStation settings for ID . . . . . .

Locality: . . . . . .

Facility: . . . . . .

Unit Number: . . . . . .


EVSE Configuration Page - Windows Internet Explorer
EVSE Configuration
Do Not Cycle Power Until a Confirmation Page Appears
Default EVSE IP (Used for Configuration menu and if DHCP is not enabled):
Enter Subnet Mask (If gateway is not used enter: 255.255.255.0):
Enter Default Gateway (If gateway is not used enter: 255.255.255.255):
Fan wired with main contactor
Disallow RCD Reclose
If Authorization Is Used: Unlock Cable from Charger Without Card Swipe
Allow non-compliant SAE J1772 behavior
After a power loss enable a random delay before charging resumes
Require Authorization for charging
If Authorization is Required enter the information below:
Enter Host IP
Host Server IP:
TCP Host Port(9000-9999):
TCP Source Port(9000-9999):
Enable DHCP
Allow charging when communication is not established
Station ID Locality:
Station ID Facility:
Station ID Unit Number:
Save

Print one page for each DuraStation and keep this record in a safe location or inside the corresponding DuraStation.

* SAVE THESE INSTRUCTIONS*

The instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the GE Company.

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